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Wanted: Another Johns Hopkins

(AN EDITORIAL)

The generous philanthropy of a businessman, the wise administration of his gift by a board of trustees, and the vision of a great university by a seeing educator brought the first real American university into being in the City of Baltimore in 1876. The biographer of Daniel Coit Gilman comments on the difference between existing colleges and universities and the new institution:

> It is perfectly true that the time was ripe for the great forward step that was taken in Baltimore in 1876; vague aspirations in that direction existed in a number of places, and fragmentary efforts toward higher university work were made here and there, by some exceptionally gifted or exceptionally equipped professor in one or another of our leading institutions of learning. But there is no telling how long a time the actual ripening might have required if it had been left to the gradual increase of these sporadic efforts, which had no systematic support, and which were not even recognized, by any but the merest handful of men, as pointing toward any broad or significant result. The first great merit of President Gilman was that, from the moment that he was called to Baltimore, the object which he set before himself was that of making the institution which was to arise there under his guidance a means of supplying to the nation intellectual training of a higher order than could be obtained at existing colleges and universities, and thus distinctly raising the standards of American science and scholarship.[1]

Ever since its founding Johns Hopkins University has been able to claim distinction for sending forth from its halls each year a never ending stream of learned men and women to take positions of leadership in all sections of the world and in all walks of life. But other institutions can claim as much. The supereminence of this institution rests on something else — on the revolutionary step it took in 1876 which resulted in a complete change in direction of the development of higher education in America.

What was this new pattern of higher education and what were the circumstances of its beginnings? Until the establishment of the Johns Hopkins University higher education in America was primarily concerned with teaching — with the transmission of the cultural heritage from one generation to the next. This, the British educational tradition, brought to America by the early colonists, dominated higher education for the first two and a half centuries of our national life. There had been, to be sure, scattered efforts at research and scholarly investigation in the colleges and universities prior to 1876, for wherever men of intellectual vitality and imagination gather together philosophic reflection and the pursuit of truth will occur. And scholars were returning to America in increasing numbers from study in German universities with a new conception of higher education. But, as the experience of Eliot at Harvard amply proves, these men often found their colleagues, and the atmosphere of the campus generally, uncongenial to scholarship and new subject matter.

Only through the establishment of a new institution unfettered by tradition and vested interests could the educational needs of the hour be met. Johns Hopkins was that institution. Educators frowned, editorial writers criticized, businessmen doubted, and supporters hesitated — but the Johns

[1] Fabian Franklin, *The Life of Daniel Coit Gilman* (New York: Dodd, Mead and Co., 1910), pp. 182-83.

Hopkins University was born, grew, flourished, and changed the character of higher education in America.

Another such radical reform is needed today. The statement that we are living in perilous days is becoming tiresome. And yet, thoughtful human beings are aware that contemporary problems are so much greater in magnitude than those of our forebears that they are almost different in kind. Only an enlightened, informed, and intelligent people can hope to cope with the intricate situations in which we now find ourselves.

If a new generation of thoughtful and informed citizens is to be educated in the colleges, teachers must be prepared for this important work. A new and different institution is needed for this purpose. Its chief purpose would be the training of men and women qualified to educate a generation of well-informed, intellectually alert, morally discriminating, and aesthetically sensitive human beings, capable of achieving a rich personal life while working cooperatively with their fellows in the improvement of the common lot. Only such a citizenry can bring order out of the present national and international chaos. Teachers of such a generation must combine broad learning, habits of philosophic reflection, and an understanding of young people. They must consider the teaching of youth a work of supreme importance and come to their employment with a religious zeal. They should be freed from the necessity of investigating small aspects of reality or of writing learned treatises on highly specialized subjects, activities worthwhile in themselves, but improper preoccupations for those whom society expects to teach the young. Relieved of these distracting works they would be able to acquire a broad learning, to reflect upon the nature and destiny of man, to consider with other members of the academic community the problems which mankind faces today, and to instruct prospective college teachers in the art and science of their calling. With an experimental college as an adjunct, to furnish opportunity for teaching experience and the investigation of the efficiency of learning, such an institution might rapidly reform college education in America. Speaking of the need for such an institution a leading critic of higher education has said:

> I suggest therefore that since we cannot hope to remake these powerful institutions [the graduate schools] with their great virtues and their great defects, we retain them. But let us give such a school a name which designates its real function. Let us call it the Research Training Institute. Its sole purpose shall be the creation of research workers for the academic world and for the worlds of business, industry and government. . . .
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> I believe we must create in selected universities hospitable to the idea a new graduate educational unit to be called the Graduate College, the primary purpose of which shall be not the training of research workers but the education of persons competent to teach intelligently the general work of the liberal college.
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> They should not be organized into departments, though their numbers should as a matter of course include representatives of all the parts of learning, broadly considered — the humanities, the social sciences, and science itself. But it should not include linguists *qua* linguists, economists who have just invented a new system or zoologists who are famous for rarefied research work. Persons of this calibre belong in the faculty of the Research Training Institute. The faculty of the Graduate College should consist of persons whose professional history perhaps began with research work but who have since come to reflect philosophically upon science, the arts and the social sciences in relation to human culture, notably in relation to education as a social and intellectual process.[2]

As in 1876, institutions of higher education today possess the resources needed in such an educational venture. Why then, a new institution? The answer is that it is needed because, as in 1876, existing institutions are not likely to do what should be done. In the first place, progress in any well-established institution would be extremely slow even if the faculty were agreed that certain changes should be made. But at present no such agreement is apparent. There are, to be sure, on almost every university faculty persons who see the urgent need for a new type of college education, and for an appropriate program for

[2] Howard Mumford Jones, *Education and World Tragedy* (Cambridge: Harvard University Press, 1946), pp. 150-54.

the preparation of college teachers, but they are few in number, and politically weak. If, however, these enterprising teachers could be assembled in an institution committed to educational reform, they might, as their forerunners did in 1876, with singleness of purpose achieve swift and basic improvements in college education.

What are the prospects that such a new institution will be launched? There are generous benefactors as there were in 1876. Only recently one provided over forty million dollars for the support of a single institution and another established a foundation with funds exceeding 200 million dollars for the distribution of his wealth. The material means are available. There are also high-minded and wise citizens conscious of the need for improvement in higher education and capable of administering funds for such a purpose, and there are educators of vision like Professor Jones who see the opportunity for educational advancement.

Will these forces which came together in 1876 to create a new institution to fit the needs of that day again be joined in the creation of an institution needed in our own time. That remains to be seen. It is a matter, however, to which philanthropists and educators might profitably give thought.

A Broader Definition of "Adult Education"

BY R. J. BLAKELY

IN THE victory of the United Nations in World War II the human race bought another chance to bring society into tune with science. It may be the last chance in this adventure in civilization; it may even be our last chance. Yet if we were trying to throw that chance away, it seems that we could not do so faster than we are doing. No sane people would war with atomic weapons; yet all peoples who can are preparing to do so. Clearly we are all insane. This is neither an exaggeration nor a figure of speech. Increasingly all of us — Indian, Chinese, Russian, American, leader, follower, manual laborer, businessman, farmer, scholar, technician — all of us are showing familiar signs of mental disorder — the conviction that the world is hostile to us, the schism between what we know we ought to do and what we do, between what we know is necessary and what we think is practicable, the feeling of helplessness in the drift toward horror. Sanity has been described as the achievement by the individual of a balance between technical skills (the ability to use things for human purposes) and social skills (the ability to share those purposes with others). Our insanity lies in the fact that we have lost the old balance and have not yet worked out a new one. Even if the children now in schools were being given a new balance, which they are not, we could not wait for them to grow into command. The learning, the self-teaching, the mutual teaching and the striking of this new balance — this is the task of "adult education." We must make at least a brave beginning within, say, the next twenty-five years. The task is not simply to build mechanically a world state out of the disordered blocks of national states; therefore it is not a job which can be left to social architects and engineers. The task is to evolve organically from one kind of society into another. In the past are all previous societies which despite their differences were essentially similar in that they were preindustrial; in the future (assuming that we avoid disintegration) are all the evolving societies which despite their differences will be essentially similar in that they will be industrial. It is a job in which all of us must take part, and as many as possible must take part consciously, understanding the processes and manipulating the environment.

In preindustrial society the rhythm was slow, the skills were established, and the activities were decentralized. The time-span of important change was longer, often many times longer, than a normal human life. Thus the conditions of the coming generation could be anticipated by the present generation. The skills which were needed could be established over centuries. The individual could learn them when young, practice them when adult, and pass them on, modified if at all only slightly to meet slightly changed conditions or to reach a higher degree of perfection. This was true of both technical skills and social skills. Moreover, technical and social skills were taught in relation to each other. That is to say, "living" and "making a living" were integrated. The use of things of human purposes and the sharing of common purposes were harmonized. The individual willingly identified his interests with the

group interest. He received in exchange the satisfactions of having a function, participating, and being accepted. He could know intimately most of the persons with whom he lived and worked. Since the society was decentralized, most of the activities of the individual were organized informally and focused within a single informal community. He as a personality could be integrated because his associations with others were integrated. The community could be integrated because the members of its constituent groups could communicate with each other and coordinate their purposes. Across the individual, the family and each group within the community lay the overlappings of many and stable relationships. This is not to idealize the simpler kind of life built upon the primary occupations and using handicraft. It had its faults, and we cannot return to it. This is merely to sketch the situation within which during most of human history most members of the human race could achieve sanity.

The factor which has shattered this harmony is the increasing speed of change in techniques. As a speedometer, let us take the discovery of new sources of power. Tools, no matter how complex, are limited by the source of power which works them; but tools make possible the use of new sources of power, which in turn make possible the use of new tools. There had been no new source of energy tapped by man from the beginning of recorded history until the fourteenth century of the Christian era. During this time man knew how to use only *physical* energy — muscles of man and beast, the push of the wind against the sail, the weight of water upon the wheel. With the construction of guns in the fourteenth century man learned how to make a specialized use of *chemical* energy. With the construction of the steam engine in the eighteenth century and the gas engine in the first part of the twentieth century man learned how to use chemical energy more generally. In the first part of the twentieth century man also learned how to use *electrical* energy. Now, in the fifth decade of the twentieth century, man has learned how to use *atomic* energy. The tempo of discoveries of new sources of energy has been quickening. Each succeeding new source of energy has been more powerful than the ones before; each has made possible new tools which led to the next; with each new discovery the gap between invention and application has been narrowed, until with atomic energy it has disappeared. If the progression between tools and new sources of energy is not infinite, at least we cannot today see its limits. A new species in a new physical and social environment has been created — Industrial Man.

Behold Industrial Man. His faculties are extended by machines, which magnify the consequences of his actions. As a worker he is so much greater than preindustrial man that instead of being enslaved by his weakness he is troubled by his accomplishments. As a consumer he is also different from preindustrial man, because his potentialities for use and knowledge are indefinitely extensible. He ranges so widely that the atom cannot exclude him and soon our planet will not be able to contain him. At the same time he is delicate. His relationships with his own kind are so intimate that they are more like the relationships between the cells of an organism than they are like the relationships between humans in preindustrial society. If Industrial Man can live for long anywhere in the world, he must soon be able to live everywhere in the world. No society short of a world society can nourish him. If he cannot live at peace he cannot live at all. Such is Industrial Man. Yet he is unaware of his own nature. He still thinks of himself as preindustrial man. He still clings to the ways of the preindustrial past.

The technological changes of industrialism have forced social changes. Today the time-span of important change is considerably shorter than a human life. But the social changes which have been forced have been made piecemeal and by instinct or violence, and not by deliberate planning and cooperative adjustment. The problem

is not simply that our technical skills are now much greater than our social skills. It is that our technical skills are now of a different order from our social skills. Technical skills have now become *inventive*; scientists and engineers assume change to be normal and consciously seek to hasten it by using methods which are *adaptive*. Our social skills remain *established*. Our social leaders pretend that stability is normal and consciously seek to prevent change by holding on to methods which are *imitative*. Our technical skills and our social skills contradict each other. Compare two groups — the scientists who engineered the manufacture of the atomic bomb and our political leaders. The scientists are predominantly young men; their methods are radical, questing after tomorrow. Our political leaders are predominately old men; their methods are reactionary, nostalgic for yesterday. Compare also the relationship between natural scientists and industrial engineers on the one hand and social scientists and leaders of social groups on the other hand. The first is close and immediate; the second either doesn't exist or is one of hostility. Most of the leaders of our social groups were set in their social attitudes before the gas engine became widely used; they were taught those attitudes by a generation which was set in its attitudes before the steam engine was widely used. We are asked by scientists to adapt ourselves to the atomic engine before we have adapted ourselves to the steam engine.

Observe what this breakup of the balance between technical skills and social skills has done to the individual. It has torn him in two according to time. It has split him into slivers according to function. The outstanding characteristic of the machine as compared to the human being is specialization. The individual in an industrialized society must arrange his life to fit the machine, both as a worker and as a consumer. He finds that no longer can he coordinate his different activities in one informal community. He must coordinate each activity in a different formal organization. As a worker he is a member of an international union or a national association. As an owner he is a stockholder in a national life insurance company. As a worshipper he is a member of an affiliated church. As a voter he is a member of a national political party. The membership in each organization is largely different from the membership of the others. The membership in each is in constant and rapid change. Each organization to which the individual "belongs" is the focus of only one kind of activity and therefore expresses only one facet of life. For the same reason the individual within each organization expresses himself as only a sliver of a person. The different organizations in which an individual coordinates his activities may not be in harmony with each other; they may in fact be opposed to each other. The individual may find himself opposed to persons whom he knows by some quarrel about which he knows little and he may find himself tied to many persons whom he does not know by some alliance of interest about which he knows little. Yet he may be compelled to act upon these alignments, not as a human being but as a member of an organization. Thus he distrusts persons whom he knows and unconsciously assumes a trust of persons whom he does not know. Reflect on the parable of a manager of a factory who is driving his car at seventy miles an hour to confer with his employees in a "parley" called by the Secretary of Labor. He may not trust the union members, although he knows them, because they are unionized; he may not trust the Secretary, although he knows him, because he is a Democrat. But he assumes that the car will run properly, that the tires will not blow out, that the highway is in first-class shape, that other drivers will obey traffic rules, that the automatic signals on the railroad crossings will work. Yet the proper functioning of all these depends upon the faithful performance of their duties by tens of thousands of persons whom the manager does not know. In this complicated, abstract social world the individual becomes divorced from the consequences of his action. The experience of the multitude who

developed the atomic bomb without knowing what they were doing is the experience of us all. And even though we may see the consequences of our actions, we may not understand. During the war two American fliers were shot down and were marched through the German towns they had been bombing. They looked at the ruins and the people, and one asked the other, "Did you know that you were doing this?" The other answered, "I had no idea." Mussolini's son who described the bursting of bombs among Ethiopian horsemen as "the unfolding of a rose" was not brutal: he was unimaginative. Few of us are imaginative enough to translate our impersonal actions into personal terms. Either we do not translate or we transfer the moral responsibility to the organization, which is an abstraction, and has no morality except in its members. In an organization which is the focus of only one aspect of life the individual tries to find the satisfactions of a full life. He does not find them. He becomes unhappy. To compensate himself for being deprived of intangible satisfactions, he becomes obsessed with tangible satisfactions. A person who is primarily interested in profits, wages, hours, prices, position, or power is an unhappy person. Yet this is the only type of person who fits orthodox economic and political theory.

In an industrialized society most functional relationships are not between individuals as humans but between individuals as representatives of groups. Frequently these representatives are professional duelists who have a vested interest not in compromise but in victory, and who are no more able to concede a point without permission than a soldier can yield a hill to the enemy without orders to withdraw. This is more than a figure of speech. The relationships which now exist between nations is the model for what is happening to relationships between organizations within the nation. Each organization competes with other organizations for the exclusive loyalty of its members. Communication between members of different organizations ceases. Motivation within each organization becomes based on fear, force, and selfishness. Cooperation between organizations breaks down. In an attempt to overcome this creeping paralysis and to avoid disintegration, the state assumes more and more control over details of life and depends increasingly upon appeal to fear or force to secure cooperation.

In this organized anarchy two heresies have arisen — "Individualism" and "Collectivism." They are halves of the same apple. Neither is an adequate philosophy for personal living; neither is an adequate philosophy for coping with industrialism. To consider an individual as an independent, isolated whole is useful at times and, within limits, true. But to raise this idea into a religion is to mistake the nature of the individual. It is also to make impossible the direction and planning which industrialized society requires. Similarly, to consider a social organization as a *real* thing is useful at times and, within limits, true. But to raise this idea into a religion is to mistake the nature of an organization. It is also to make impossible the creative, widespread, spontaneous contributions which industrialized society requires. Despite their differences, note the similarities. The person who claims the unqualified rights of "individualism" for himself applies the philosophy of "collectivism" to others. The person who applies the philosophy of "collectivism" to others claims for himself the unqualified rights of "individualism." The leaders of the Soviet Union in their behavior toward their followers exemplify "rugged individualism" at its most extreme. The millions of Americans who are caught up in the standardization of industrialism and machine politics live in conditions remarkably like "collectivism." These similarities may be due to the facts that the requirements of industrialism are much the same everywhere and that nowhere has a solution adequate to the problem been found. "Russia versus the United States," "East versus West," "Christianity versus Materialism," "Collectivism versus Individualism," "Capitalism versus Communism," "Economic Democracy versus Political Democracy," "Capital versus Labor" — these are battle cries of slivers of human beings

imprisoned by the provinciality of their pasts, their civilizations, their races, their religions, their nations, their classes, their functions, themselves. They may express conflicts which are real, but they are not adequate for the resolution of those conflicts. They do not aim at that new and larger arrangement in which lies our only hope.

We return now to the problem of striking a new balance between technical skills and social skills. Of this new balance, we know what the technical skills must be — the techniques of applied science which are industrialism. A world society was not physically possible until the agencies of industrialism overcame the barriers of time and space. Democracy as defined by either the Americans or the Russians is not possible until the agencies of industrialism create a considerable margin above subsistence. Industrialization did not begin even in England until the eighteenth century. It is not yet complete even in the United States. It is not yet well under way in Russia. It is just beginning in India. It has yet to begin in most of the world and for most of the human race. We should not be surprised therefore that there are as yet no concepts to unify the civilizations which are today for the first time encountering each other. However, we cannot be passive. The swirl of cultures today represents the full harvest of variety developed by the entire human race over its entire history. If a world civilization is to evolve embodying the high intuitions and the humane behavior of parochial civilizations, its sociology must be appropriate to its technology. The technical skills of its technology are adaptive; therefore the social skills of the new world civilization must also be adaptive.

Two of the social requirements of industrialism can be sketched. First, industrialism requires a high degree of routine combined with a high degree of innovation. Order and dependability are the plasma of industrial life; yet industrialism is producing constant change. Thus the citizens of an industrial society must have the habit of acquiring habits rapidly and the habit of breaking habits easily. The leaders of industrial society must have foresight. One cannot prepare against the unknown; but one can prepare against the probable. Out of a welter of factors, which ones are the most significant for the future? Foresight is the ability to answer this question correctly. But man is not entirely passive, doomed to accept the future indiscriminately; man has some ability to form his own future, and that ability today is limited chiefly by his ability to cooperate. This leads us to the second requirement. Industrialized society requires a high degree of direction combined with a high degree of spontaneous cooperation. It must be purposefully organized, with planning and coordination of plans from one direction and with willing participation and conscious coordination of specialized activities from the other direction, meeting at all levels, from the individual to the entire human species. It must be formal enough to permit definite purposes to be realized, yet fluid enough to permit the individual to participate in various ways and to harmonize those ways, both within himself and with others. The fact that direction from the top and spontaneous participation from the bottom seem to be contradictory illustrates that neither "individualism" nor "collectivism" fits the requirements for industrialized society. The Russian system gets direction, but the question is whether it can produce enough persons with the ability to make correct judgments and the initiative to assume responsibility for making decisions. The American system gets spontaneous cooperation, but the question is whether it can get enough agreement on direction. These are merely differences in emphasis. Neither system gets enough direction and neither gets enough spontaneous cooperation. The nations of Western Europe which are experimenting with socialism face the same problem. More than a mere change in ownership of the means of production and the retention of civil liberties is involved, as important as these factors are. The peoples of China, India, and Latin America will face the same problem when they become industrialized. The question is sharp whether the human race has enough

brains and amiability to operate a world-wide industrialized society. Certainly industrial society is too complex, too abstract, too fragile, and too powerful to be run by individuals whose attitudes and social skills remain in the pre-industrial stage.

The difficulty is not philosophical. There need be no contradiction between an individual and an organization or between systems of organizations. An organization is composed, not of *persons*, but of the consciously coordinated *activities* of persons. Though an individual may coordinate his activities in different ways, *he* remains the reality. He is both more than and something different from the sum of all the ways he has focused his faculties. But he finds his fulfillment only in association with others. The individual is free not to be chaotic or perverse but to be orderly and cooperative. An organization is not an end in itself but a means to the end of doing together what cannot be done alone. Planning is not a driving but an accepted direction. Leadership is not a tyranny but a bringing forth of cooperation. No, the difficulty is not philosophical. It is practical. The crux of the question is how industrialism can be made a way of life. We all have a memory, either personal or folk, of how farming used to be both a way of making a living and a way of life. But so far industrialism has simply been a way of making a living. It is destructive of both other ways of making a living and previous ways of life, including farming. As industrialism spreads over the world, so will social disintegration spread until mankind is either wiped out or thrown violently back into pre-industrial conditions to try again or adapts industrialism as a way of life. In the United States a few industries and unions have experimented with this. Their leaders have deliberately worked to make the associations in the plant and the union more humanly rewarding. They have been paid by improved efficiency, greater production, and better relationships. This kind of experimentation is going on in some of the soviets. But there is nothing in communism which makes it automatic and there is nothing in capitalism which makes it impossible. It is not a question of who owns the means of production; it is a question of how they are used. The problems of "bigness" in organizations within an industrialized society are the same in the United States Steel Corporation, the Tennessee Valley Authority, the United States army, the Russian army, the Russian soviets. We cannot decentralize. We must find a way so that beings organized like machines can live like humans. There is no formula. But big organizations are made up of smaller organizations, and for everyone there is a basic unit where he should be able to find in some degree the satisfactions of being regarded, not a commodity or a function, but as a human being, and of feeling that he is needed. This would be the industrial counterpart of what the community meant to the individual in pre-industrial society. During the long journey which led to the splitting of the atom, modern man split himself into many parts. In order to use the energy of the atom, man must integrate himself again. We cannot start either at the top with the world and the nation or at the bottom with the individual. We must start at the level where personal associations are varied enough to give human fulfillment but before they are so numerous that they blur into abstraction. Here the individual can live and work and play. Here he can learn how he fits into the oceanic society about him and how it touches him from all sides, here, among his fellows, in application to his life, not in the dissociated classroom or lecture hall. And the methods of teaching and learning must be appropriate to the environment. Not until we consider the problem of human happiness as vital as the problem of industrial output will we make any real progress.

What is critically needed is a science of human relations. Before we are ready for it we must do some spade work. We need to know more about human motivations. The concepts of the "economic man," the "political man," the "leisure man" and other premature generalizations are abstractions of single aspects and are therefore monstrosities. We need to approach the frontier

of human relationships sensitively without neat, thin preconceived theories and to study human beings in all their rich and disorderly wholeness. We need to know more about the science or art of evoking cooperation from others and of cooperating with others. We need to know more about the functioning of organizations. Then perhaps we can fashion human skills which are highly adaptive, which are built not upon the false and idolatrous assumption that stability is the normal rhythm of life but upon the recognition that to conserve things of the spirit we must frequently change form and substance.

We cannot wait for large generalizations, of course. We must use what we know already, which is more than we commonly realize. However, at the start two attitudes impede us. One is the prejudice that, unlike physical nature, society is not a proper field for investigation, experimentation, and analysis. No more need be said than to observe that today when we desperately need fresh, original thinking concerning society, the tide of intolerance is rising against all thought which questions orthodox conclusions. We swim against this tide at our peril, but it is our obligation to do so. The other attitude is that the methods of the natural sciences can be applied to society. The outstanding fact about physical nature is that its behavior is determined. The outstanding fact about human nature is that it is to a degree free to choose between courses of action. The degree of choice at any one moment may be low, but consistently and purposefully used it is all-important. When one tries to apply the methods of the natural sciences literally to the social sciences, freedom gets in the way. The human "atoms" won't "behave." Attempts to make them behave lead to programs which try to standardize individuals and which rely on force. But when we accept freedom and work out methods appropriate to it, we may find that freedom is not a caprice which frustrates predication but an awareness which brings it to pass, not a perversity which obstructs planning but an eager energy which executes it. And the "objectivity" of a social scientist must be different from the "objectivity" of a natural scientist. Human sympathies and humane values are for a social scientist a tool more penetrating and revealing than radioactivity is for the natural scientist.

Giving Individuals a General Education: A Discussion of the Experience of Bennington College

BY BARBARA JONES

THE PRESENT widespread concern about general education can be counted as one thing gained from the impact of world crisis. Not since the early days of this Republic has there been such shared and responsible thinking about the meaning and purposes of American civilization, nor such general determination to preserve and strengthen its values. The stage is set for an educational revolution of vast promise, but also of vast difficulty. Self-reform is always a boot-strap operation. Habits and institutional conservatism are strong. We shall find it easier to agree on the qualities of an abstraction called "the liberally educated man" than to alter our teaching methods in such a way as to begin to develop his qualities in a freshman student named John Doe; we shall find it more difficult, but still dangerously easy, to agree on what John Doe ought to know, and devise a set of comprehensive survey courses which — if he could be persuaded to absorb and remember their well-thought-out content — would make him "generally educated" for all time to come.

It is the contention of this article that the rebuilding of our educational system to provide a general education appropriate for our times cannot be achieved overnight by the substitution of "integrated" courses for the much-criticized free electives; that it will require a long-range, cooperative effort and a willingness to experiment with both the methods and content of higher education; and that if the present ferment results in the substitution of a new "system" for the old one, it will be as vulnerable as any system must be in a society which has to fit varied, complex human beings to function effectively in a changing, complex civilization.

The criticism that American higher education has lost its way, and no longer provides a general education which develops the best potentialities of persons and citizens as well as training specialists, is of course, not new. Only the present unanimity is new. In the last thirty years, many colleges have made and acted on similar criticisms, and the collective experience of these pioneer institutions should be of considerable value in the current movement for reform. I propose therefore to discuss the problems of general education as they have been encountered in one such reformist institution, Bennington College.

Bennington College was founded in 1932 as a "thoroughgoing experiment in higher education," with a well designed and consistent plan embodying many successful innovations already tested elsewhere, and others long advocated by educational theorists. It was committed to the attempt to individualize education, and to "build a curriculum adapted to the interests and needs of contemporary young women." It was further committed to a flexible, experimental approach, adapting its procedures in the light of its own experience, and the development of educational thinking in general. Without conservative alumnae or settled habits, Bennington has lived its short life in a highly stimulating period, and has been pe-

culiarly sensitive and responsive to the intellectual currents of the times. Starting with a radically individualized approach, the college early encountered some of the typical problems of general education. In 1941, a revised curriculum stressing general education was introduced, which is in many respects strikingly similar to the departures announced by Harvard in 1945. In the pages which follow, I propose to discuss some of the ways in which Bennington tries to ensure that each student gets a general education in the absence of compulsory courses or a uniform and fixed curriculum; and, on the basis of five years' experience with the new general curriculum, to discuss some tentative conclusions and some continuing or emerging problems which may be of interest to other colleges contemplating similar changes.

SOME FEATURES OF THE BENNINGTON EDUCATIONAL PLAN WHICH RELATE TO THE PURPOSES OF GENERAL EDUCATION

The original Bennington educational plan, explained in the Announcement for 1932, makes no mention of general education. But the program of the new college embodied many important ingredients of general education, and has had fourteen years' experience with a number of practices which were then unorthodox, now more generally accepted.

For example, the whole plan is pervaded by the idea that education is a continuing process, its success measured by the degree to which students acquire the habit of continuing self-education. Accordingly, *how* the student learns is as important as *what* she learns. Grades, credits and examinations were therefore eliminated, and the College has relied on the more realistic and permanent motivation of student interest as a spur to learning, locating discipline where it really belongs, in the requirements of the subject itself. The College has tried to treat its students as younger workers in some important field of human achievement, rather than as students meeting the requirements of an academic degree. The winter non-resident term, during which all students must go into the working world for three months, is also designed to induct them gradually into their adult roles, and to eliminate as far as possible the sharp break between "learning" and "living."

Education is always an individual achievement, and there is of course no conflict between Bennington's avowed purpose of individualizing education, and that of giving each individual a general education. It has meant that Bennington adapts its teaching methods to the fact that students start at different points, grow at different rates, and have different purposes. The first class of 87 freshmen was offered no pre-arranged curriculum; instead, the content of the organized course work of the college has emerged as a result of successful teaching experience, and is constantly being revised, in the light of the changing character of the student population, the requirements of excellence in each field, and the more general needs of all students as persons and citizens.

It is perhaps unnecessary to say that respect for students' interests does not mean rampant specialism and chaos in the curriculum, nor that the college avoids its educational responsibility for the general orientation of the student. There is of course nothing sentimental about taking account of what the student really wants to know; it is entirely realistic. It is the business of the college to *educate* interest; but unless instruction is at every stage geared to what is going on in the students' mind and emotions, much of it may be waste motion, resulting in little permanent learning. And a better curriculum is likely to result when teachers rely on the pull of good materials rather than on compulsion to enlist the best efforts of their students.

Bennington has not conceived of general education as a definite body of subject matter which all students must take in some fixed order, before being allowed to specialize. The original educational plan stated that continuing self-education was most likely to result through the "acquisition of mastery in a few fields of enduring interest rather than smatterings in a great many fields."

Major concentration in a broad field meets the diverse interests and talents of students, and serves as preparation for an adult vocation or avocation; but it is also useful in providing a disciplined focus for general education. The relation between specialized and general education at the undergraduate level will be further discussed below.

It is now commonly agreed that general education must concern itself with the whole person. Again, the Bennington program has been strongly influenced from the start by this idea. It has meant careful counseling and flexibility in adapting each student's program to her intellectual and emotional development; and it has meant the planning of all aspects of college life and work with consistent educational purposes in mind. Thus she is not treated as an adult in the classroom and an infant in the infirmary; participation in community government is given equal weight in her program with theoretical study of politics, and is planned with a view to its effect on responsible democratic behaviour, and the development of adult self-discipline. There are no extra-curricular activities; any serious activity of the students is part of her recognized "curriculum." The arts — music, drama, dance, painting, sculpture and literature — take their places along with the more conventionally emphasized "academic" subjects, as contributing important values to personal development even for students with no special talents, or professional purposes. In all this, Bennington is closer to the Greek than to the nineteenth century conception of education.

THE MEANINGS OF INTEGRATION

It is also commonly agreed that general education must be integrated and cannot result from a random collection of required courses and free electives, which have often had neither the virtue of internal coherence nor that of adaptation to the needs of the individual who collected them.

Many of the teaching devices adopted at Bennington were designed to ensure that integration should take place, not in a faculty meeting, but in the minds and feelings of students. Again, this has meant considerable variety and flexibility in individual curricula. Bennington has neither required courses nor free electives. Each student works under the direction of a counselor or tutor, who supervises her whole program, and who has the authority to prescribe for her. She is asked to make responsible choices, thinking out the relationship between the various parts of her program, taking tool courses and learning techniques when she knows why.

But integration was thought of, not only in the sense that each individual program should be an intelligible and purposeful whole, but from the point of view of the curriculum of the college seen as a whole. I have already said that community activities and classroom work were regarded as part of one educational process, guided by consistent educational policies. In the organization of fields of instruction, also, breadth and relationships were emphasized. Thus the faculty was organized for administrative purposes into a few broad divisions: social studies, science, the arts and literature, designed to represent the important fields of human achievement, and not split up into "subjects." Major concentration was thought of as covering the whole field, and narrow specialism was disapproved. At the freshman level of teaching, every instructor tried to function as a general practitioner, allowing students to tackle interesting problems without classifying them under subject categories; and there developed an unusual degree of unity of purpose among the specialists grouped together in each division. How this unity and coherence itself became a problem will be touched upon later.

THE MECHANICS OF GIVING INDIVIDUAL STUDENTS A GENERAL EDUCATION

One of the most difficult problems of general education is to achieve simultaneously both the kinds of integration mentioned above, and to keep them in balance. There is on the one hand the danger that custom-built curricula which make sense at each stage to each individual may result in chaos and ultimate frustration. The extreme

"ramifications-of-interest" theory of integration does not by itself provide any means of co-ordinating the activities of some 300 students and 50 teachers in a common educational enterprise. On the other hand, the best designed schemes for an integrated curriculum for the college as a whole may fail because they lose sight of "that obstinate and intractable reality — the female student." (See "Everything Correlates: Some observations on the Educational Continuum," by Cleveland and Anderson, Vassar Co-operative Bookshop. This is an amusing commentary by two Vassar students on current educational reforms.)

Bennington adopted several devices to ensure that the planning of the curriculum should be made with an eye on actual students. The counselor system is one. Small classes, with informal methods of instruction, facilitate direct communication between instructor and students, so that the effectiveness of teaching is constantly checked; and an extremely useful device is the Student Educational Policies Committee, which serves as liaison between students and faculty, supplementing the direct relationship which may fail at times; and keeps in constant touch with the President and the policy-forming committees of the faculty.

Until 1941, the most important administrative instrument for co-ordinating all the work of the first two years, or Junior Division, was a central body called the Personnel Committee, made up of the president, the director of admissions, the records officer, and several teachers. This group assigned counselors, passed on any proposed changes of counselors; it met regularly with all the teachers of each student, considering each program in the light of general college policies, and formulating policies in the light of the individual problems it encountered. This method of deriving general policies from joint consideration of concrete cases did much to give unity to the curriculum, while keeping it "student-centered."

Once promoted to the Senior Division, or advanced work comparable to honors work of the last two years, the student passed out of the jurisdiction of the Personnel Committee; and her counselor, a member of the division of her major concentration, was responsible to the divisional faculty group. Out of this arrangement grew some of the problems discussed below.

SOME PROBLEMS OF GENERAL EDUCATION WHICH EMERGED AS THE BENNINGTON PROGRAM DEVELOPED

Perhaps because Bennington started with such a clearly thought out educational plan, providing consciously for the integration of each student's program, as well as for the integration of major fields, some of the crucial problems of general education emerged in a peculiarly sharp and inescapable form, as soon as the four-year college had been in operation for several years.

The separate divisions were relatively autonomous in planning the content of the curriculum for their major students. Each gave careful consideration to the introductions if offered to non-major students; there was an unusual amount of co-operation, and subjects were not fenced off by "no trespassing" signs. Yet, because intelligible sequences of work were more readily planned for majors than for non-majors, a centrifugal tendency could soon be observed as each division developed its potentialities. Social studies and literature each become quite explicit about its internal unity, the one emphasizing the scientific method of looking at human affairs, the other defining itself as an art; but this process also served to emphasize the lack of unity in contemporary culture, and Bennington displayed in a highly articulate form the prevailing conflicts between the scientific and the humanistic approach, between the arts and the sciences, and so on. Each division was unusually free to explore the limits which could be reached in an undergraduate institution; many of the faculty were drawn, not from the academic world, but from among active practitioners in the various fields; students were not asked to take on the limited responsibility of preparing themselves for examinations, but were invited to take their places as serious workers who would pursue their interests into adult life. Though all this had an

excellent effect on the quality of the work done, it also threatened to result in the development of separate "schools" within the college, with a consequent loss of unity for the curriculum as a whole. The trouble was not that the divisions neglected the requirements of general education; rather, each tended to take too much responsibility for it, monopolizing more and more of the time of its major students with its own version: general education through drama, general education through science, general education through social studies, and so on. Students — and teachers — necessarily learned a good deal from one another, and no one could ignore any of the points of view so stoutly held on the campus. But it was more common to find a drama student convinced that all social scientists were ignorant of human values, unless they could share her experience in drama, or to find a social studies student deploring the ignorance of the economic facts of life displayed by art majors, than for any student to apply these same criticisms to her own program. The faculty became convinced that greater unity was needed, in order to relate the specific purposes of each division to the general purposes of the college, and so define its role in general education.

Moreover, the faculty became increasingly concerned about the relative neglect of certain areas of obvious importance which could not be classified within any one division: history, philosophy and ethics, mathematics, logic and languages. All these were taught, in accordance with one Bennington principle of integration, in connection with their use.

It was an avowed purpose of the college to stimulate interest in history and philosophy, and to develop historical and philosophical perspective. Most young students come to college with little genuine interest in history, if not with a positive aversion based on school experience. It does not seem possible to provide a "background" of historical knowledge in the absence of a "foreground" of interest. But historical curiosity becomes keener and more fruitful when students are allowed to tackle more immediately interesting contemporary problems, whether in social studies, art or literature. Bennington proposed, therefore, to wait for this development, making every effort to stimulate historical interest by relating history to the concrete work in each field of study. Actually, no one was completely satisfied with the results. History is indeed an inevitable part of the study of politics, economics and literature; but it is not part of the day-to-day study of science, psychology or sociology, however much the scientists and sociologists value it in theory. It became apparent that the divisional organization could not by itself give adequate emphasis to history for all students.

With philosophy, the case was somewhat different. For administrative purposes, the teacher of philosophy was grouped with the social studies faculty; but philosophy was part of the teaching in all divisions. The various philosophical points of view represented took on something of the nature of interdivisional battles, students lining up with their major faculties against all comers. The only organized channel for expressing these controversies was the evening meetings program, and many stimulating exchanges have been held before the college community. But again, the faculty felt the need for a more conscious, common emphasis on the important philosophical problems of our times.

Language and mathematics, thought of as generally useful tools, presented still another kind of problem. The Literature Division was not made solely responsible for the teaching of communication skills, and no compulsory courses in Freshman English were given. Instead, every member of the faculty was asked to give careful criticism of all written work, so that writing techniques should be learned in connection with their use in all fields. This policy has been effective, though it requires constant emphasis, through faculty discussions and the exertions of special committees.

But mathematics, offered only as a tool course in the science division, was taken by few students outside the science field. Any unusually determined and interested student could pursue it further; but

any student without a special interest in or a direct use for mathematics could avoid it entirely.

Foreign language study was encouraged only if the student had some definite purpose, using it either in connection with science or social studies, or as part of the study of literature. It was discouraged, if a student wanted to go on with German, let us say, merely because she had "had two years of it," but was unlikely to make it part of her permanent and adult equipment. An alternative investment of college time seemed likely to be more profitable. There was no organized course in logic, Bennington sharing the progressive prejudice against abstract "thought-training," and preferring the more concrete approach which uses the discipline of each subject studied. But the divisional organization provided no place for any advanced consideration of the universal methods of thought and communication: mathematics, linguistics or semantics.

As soon as the four-year college had been in operation long enough to clarify these problems, the faculty undertook a thorough-going revision of the curriculum, with the purpose of providing more definitely for general education. It had made full use of the motivation provided by student *interests*, and had taken full responsibility for providing good content* in each of the major fields, — in other words, for meeting students *needs* as workers in these fields. It proposed to take the further step of stating what were the important things which every student ought to think seriously about, no matter what her special interests and purposes. In short, the faculty was determined to project its experience forward, attempting to work out a general curriculum which would embody some concept of "the culture-as-a-whole" to which the individual-as-a-whole could relate herself.

* It should perhaps be remarked that the relatively free methods in force at Bennington College had not resulted in any neglect of content, or any bizarre curriculum pattern. Bennington students scored well above the national average on standard information tests. For a full report on this, and on the Bennington experience, see "Bennington College: the Development of an Educational Idea," by Barbara Jones. (Harpers, 1946.)

During the year 1941-2, therefore, committees of the whole faculty, working with the student Educational Policies Committee, undertook a thoroughgoing revision of the curriculum. A necessary step in the direction of unity was the abolition of the Divisions as policy-making units; and this was a painful operation even in young and flexible Bennington.

THE BASIC STUDIES PROGRAM

The organized curriculum (as distinct from the individual tutorial work which remains important) was classified under two heads: Basic Studies and Special Studies. Under Special Studies came all those courses, most of them already worked out in the divisional organization, which were important for each special field, but not necessarily important for every student. The Basic Studies program was new, and its purposes were stated as follows: "to make available to all students, in the most effective way, the fundamental language of each of the important fields of human achievement which together make up the Western cultural heritage; to emphasize the historical development of that heritage and the relation within it of specialized fields to the whole; and to bring up for serious common consideration the main lines of philosophical conflict which divide us, as well as those traditional values which unite us, as members of American civilization."

If we consider the purpose of education to be provision for unity-in-diversity, the Basic Studies were to be concerned with unity. But it is clear that there is no ready-made cultural unity available. Diversity is a fact which must be accepted. The Basic Studies program was seen as necessarily a growing and developing thing, using the insights of many different disciplines to work toward the achievement of "the broadest and most inclusive cultural synthesis, in which the sciences, philosophy and the arts all have their proper places, and are seen as themselves, not as reflections through some other field."

Thus the Basic Studies program is not a "core" curriculum in the sense that it organizes the work

around — let us say — social science, teaching literature and history as an aspect of sociology, using the arts only as entertainment, anthropology or therapy; nor does it make literature and the humanities the core, to the neglect of science and the non-verbal arts. It does not provide a uniform content which all students must take in some fixed order. Instead, it is a group of courses, running through all four years, annually revised in the light of experience and changing needs, taught by faculty members who are also teaching in one or more of the Special Studies categories, and still taken by students on the advice of their counselors in the order most appropriate for their individual purposes and needs. The word "basic" is defined as meaning "basic to an understanding of the culture to which we belong," so that the intention is not to present the students with a ready-made orientation, but to enlist both faculty and students in a continuing search for meaning and relationships. In method, the Basic Courses do not depart from the usual Bennington practice of trying to ensure that the student does the learning. They are not surveys, but attempt to focus the work on significant problems in politics or economics, the close study of a few works in literature or drama. Direct experience in art or music goes along with theoretical study so that students will as much as possible learn the thing itself, not merely *about* it.

The purposes of the courses in the basic program remain constant, though the content varies from year to year. First, they seek to provide for *literacy* in all the important fields of human achievement. Second, they stress the *relatedness* of all fields to one another, and try to develop *philosophical and historical perspective*. While each course can be said to deal with a "subject," it is not intended as an introduction to further work in a specialized field; it is taught with the needs of the non-specialized student in mind. Several of the advanced basic courses deliberately choose the same texts, dealing with them from different points of view; for example, readings from the Bible, from the same Greek and mediaeval and contemporary thinkers, may appear in a course in Human Nature and Character Structure, in another on Literary Sources, a third on Backgrounds of American Thought, a fourth dealing with the individual and society. A student may be taking several of these courses in her last two years, or she may share a room with some one who is reading the same texts in another course, and discuss the differences in treatment with her.

Typically, each student spends about half her time in each part of the program, majoring definitely in one field in the last two years, but still taking some basic courses; but there are permissible variations from this pattern. The basic studies are not thought of as solely responsible for general education. An important necessity for general education is that it should *relate* specialized knowledge to broader human purposes, and this cannot be done once for all by concentrating general education in the first two years. The two parts of the program are thought of as constantly interacting with and enriching one another. Some of the basic courses provide a background for advanced work in several special fields; or a specialized course may lead into an advanced basic course. Though the Basic Studies are concerned with the generally important materials and have a philosophical-historical slant, they are taught as concretely as possible; and the Special Studies are not taught as isolated fields, devoid of philosophical implications. Students and teachers are working in both parts of the program, and cannot fail to be sensitive to their inter-relationships. The whole four-year program is thought of as adding up to a general orientation slowly achieved by the student.

SOME PROBLEMS OF CONTENT

The easiest fields to incorporate in such a general program are of course the verbal fields of social studies and literature. Notwithstanding complaints among literature teachers that most freshmen are basically illiterate, it remains true that all are able to read and write in some fashion, and are therefore immediately accessible to higher education in those fields susceptible of verbal treatment. (There is indeed some danger that the cur-

rent reforms will be too exclusively verbal: a re-emphasis on literature and the humanities is long overdue, but will not by itself solve the problem of general education.) In science, music and the visual arts, even an elementary literacy is commonly lacking. Few women enter college with sufficient training in the symbolic language of measurement to make advanced work in science, or consideration of the relatedness of scientific to other ways of knowing, immediately possible. Nor do many come equipped with the languages of music or the visual arts. For this reason, it is easier to work out advanced Basic courses in these aspects of learning which derive directly from literature, philosophy and history than in the non-verbal fields. In art, music and science, the basic courses for non-major students still devote most of their attention to the cultivation of literacy at a relatively elementary level. It will require a long period of co-operation among schools and colleges before all the arts and sciences can be incorporated in a fully adequate conception of general education.

THE DEFINITION OF MAJOR WORK

Concern for general education does not, of course, imply the elimination of all specialization. Major concentration has obvious value, not only as preparation for possible professional work, but as a discipline and focus for undergraduate study. But the definition of the content of each major inevitably raises questions about the weight to be given to specialized techniques, and the role of each field in general education. It is always easier to prescribe for the student who is definitely headed for some profession, for example a science major who expects to go to medical school. But what of the girl with a strong interest in science, who expects to spend the next twenty years of her life raising a family? The same problem occurs in all fields. Faculty groups find themselves torn between the requirements of the field itself, as they have known it in practice or in graduate training, and the diverse requirements of individual students.

Under the revised Bennington curriculum, a central faculty committee passes on each student's program, approving her proposed major in the light of her own purposes and capacities, and the requirements of her general education. The former control of the separate divisions over the work of the last two years has been removed. Any proposed major must meet certain criteria: it must be narrow enough to provide a real discipline, and must include training in the appropriate techniques without degenerating into triviality or gadgetry; but it must be broad enough to yield, in connection with the Basic Studies, the continuing values and relationships which constitute a general education. The normal requirements of each major are stated by the responsible faculty groups; but any student who presents an unorthodox plan is allowed to pursue it, under the supervision of a special committee, if it meets the above standards for major work.

Thus, through all four years, curriculum planning is anchored to the realities of concrete cases; and this does much to counteract on the one hand the ever-present centrifugal tendency which threatens to destroy unity for the curriculum-as-a-whole, on the other hand the abstract integration of subject matter in a unity which might fail to meet the needs of each student for an individually integrated program.

SOME CONCLUDING COMMENTS

The concept of general education on which Bennington bases its program is that of the education of the student-as-a-whole in the culture-as-a-whole. Her total educational experience should be general in two senses: in that it links her with her fellows in some shared knowledge and values; and in that it serves her well in a number of different and unpredictable life situations. Hence she should understand her own tradition, she should be able to communicate with people whose special line is different from her own, and she should see the relevance of her own special interests to broad human purposes. But her capacity to go on learning, adapting herself to change without losing convic-

tion, is a more important ingredient in her general education than any particular content she may have learned.

The fact that general education has been so long neglected poses a special problem for the immediate future. It means that teachers as well as students must go in for continuing self-education.

In selecting a faculty, it is of course necessary to seek people with a high level of special competence. But any college which expects to tackle the reconstruction of general education requires from its faculty that they be willing to attempt synthesis. This has been long discouraged. Even in fields as closely related as economics and history, one hears competent people saying: "I am no historian, so cannot make a judgment on that point. I must refer you to my learned colleague X." Often this is no more than false modesty, but it remains deplorable. It reflects the no-trespassing attitude of departmental rivalries. An economist who in fact feels no responsibility to read and understand history, and to make use of it in his economic thinking, is perhaps too specialized to be a good economist, certainly too specialized to be a good teacher of undergraduates in a program of general education. Yet some current notions about "sound" scholarship seem to encourage this overmodest confinement of each man's competence. For this reason, some of the teachers most useful in the present tentative stage of curriculum-building may be the "unsound," non-academic thinkers of insight and imagination, who are willing to range rather widely and to risk being mistaken in order to attempt synthesis.

Such people can be found among practitioners of literature, but at the moment they are harder to find among scientists. The difficulty which Bennington has encountered in working out basic courses in science is no doubt partly due to the formidable technical apparatus of each science; it is not easy for a group of scientists to agree on the materials to be chosen for general education, in spite of the supposed unity of science. But it is also due to the prevalent system of academic advancement which rewards only specialized competence. In literature and the other arts, Bennington has benefited from its freedom to select teachers from among active writers and artists, with little regard for the conventional academic degrees. They find Bennington a favorable environment in which to carry on their own professional work while teaching. A small women's college is not as attractive to scientists, whose professional advancement requires research facilities, and who may be afraid of becoming "just teachers" if they devote themselves exclusively to problems of undergraduate education. The larger universities are in a better position to develop the necessary general science courses, and Bennington and other small colleges will no doubt profit from the work which Harvard is now doing along these lines.

But in other respects, the smaller colleges have a good deal to contribute. They have — or can have — the immense advantage of flexibility. General education cannot be taught "in general"; it is always a question of teaching a particular individual a particular thing, so that the selection of content must be continually faced. Bennington has moreover found that the co-operation of teachers of different backgrounds in devising individual programs of study, and in working out the content of the Basic Studies program, together with the close intellectual contacts and mutual stimulation which occur in a small and active community, contribute greatly to the general education of teachers as well as students.

Civic Education in the United States

BY CHARLES E. MERRIAM

CIVIC EDUCATION is not merely a problem in political education, but of education in the broader sense of training for private as well as public governments.[1] It is not merely a problem of the education of youth, but also of adult education running far beyond the formal school. It must deal not only with significant aspects of governmental processes, but also with related aspects of economic and social processes. Government is not merely the plaything of the powerful, but a cross section of human life. The relations of sub-super- and co-ordination run through all the ways of life. The ends of government — security, order, justice, welfare, liberty — are of concern to all sorts of associations, in relation to special ends of their own.

What we actually find is serious weaknesses in civic and social education for youth. In addition to this there are millions who do not have the benefit of any adequate education at all. Textbooks limp far behind emerging problems in many instances, even on the basis of formal standards, of a generation ago, while emerging problems are often left out altogether.

In the coming period the structure and functions of the social and governmental order will be at one and the same time far more intricate in detail and more simple in general outline and strategy. But the key cannot be found in the minute description of the mechanisms of government, public or private, or of their intricate processes. This is not because the cogs are not important. They are, but they are important as parts of larger processes of which they are integral parts. The anatomist is always important but not all important.

What each generation strives to understand is the nature and operation of the culture — the life ways — in which it finds itself. But this must include not only what these ways are but how they came to be, how they may be adapted to changing circumstances, and where they lead or may lead. This requires the study of patterns of interrelated systems, interpenetrating others from time to time in a rapidly moving system of attractions and repulsions. The relatively simple act of walking is difficult enough to describe accurately, but this is very simple compared with what the velocities and whirlings of the social system involve. Through many of these we move without a conscious thought of what we are doing, but when a new factor enters there is or may be confusion and disorder. Famine, pestilence, war, flood, fire, unemployment; any of these or other factors can seriously upset the pattern of stable conduct and lead to wild and hysterical action in the society.

It is an essential part of a sound education to present the main considerations in these processes, the ways and means of dealing with them, without panic and perhaps disaster. This is a product partly of temperament, including will power and persistence, as well as intelligence and experience of a broad type. Those of low level susceptibility have difficulty in making any other than the most tardy adaptation to changing circumstances, while the more sophisticated make readier adjustments to

[1] See my *Civic Education in the United States.*

new situations requiring modifications of attitudes and behavior. In this process Frank has emphasized the usefulness of the arts of symbolism in many forms as a means of reorientation for the individual, while Ruml has expanded the values of what he terms "homefulness" — feeling at home in the surroundings in which we live and move and have our being.[2] It will be found necessary to call in the aid both of art and of science in this training process. They are not rivals but in a well-organized system should be complementary to each other in the production of attitudes and capacities.

GUIDING CONSIDERATIONS IN CIVIC EDUCATION

A consideration of paramount importance is the guiding star of the spirit and practice of democracy. The recognition of the principles of liberty, equality, fraternity, of the dignity and rights of man, of consent of the governed as the basis of organization, of justice, of a fair share of the growing gains of civilization. These are guiding considerations in the development of the relations between the government and the economic order. Democracy, it is true, has never been fully carried out in practice, but we move in that direction, distressing as the way may be at times.

The temptation to abandon democracy for what seem the short cuts of dictatorship, of the few or of the many, is strong at times; but in reality these are the long way around, alike in industry and in government. In crisis government as in flood, fire, famine, war, it is not always possible to obtain any formal consent. Yet the intangible known as morale is always evident in war, and the test of the flexibility of democratic institutions is their capacity to spring back from military to civilian rule. What may be called the "timing" of consent is of great importance in all organizations. Likewise the "reasonable expectancies," what we may count on, are of vital meaning in all sorts of relations where sub-super- and coordination are concerned. But it is important not only to know what to expect, but to be able confidently to expect justice and fairness, and to be treated as a human being rather than an automaton — an end as well as a means. It is not merely the giving of orders that causes discontent, resistance, revolution, but the rationale of orders or lack of it. Even in crude slave-master relations these considerations are important, but on the high level of democratic consent they become still more significant. They may win or lose the battle whether on the military field or for industrial production.

The arbitrary spirit is constantly cropping out in human relations, governmental and otherwise, and at times seems to be crowned with success, and indeed may be. But the factor of success is not found in the arbitrariness but elsewhere, in the combination of other factors of quite a different quality. The dictator cashes in, so to speak, and spends the product of years of other types of cooperation in which justice and fairness were dominant elements. He reaps where others sowed.

In the long road up from slavery, which we have now formally abandoned, to the freedom which we formally avow, arbitrariness, injustice are only slowly discarded, while the treatment of men as equals and as brothers is still more tardily and reluctantly given up by the survivors of old-time overseers and drivers.

Hence it is important to keep democracy in mind as a guiding consideration in the emerging program, and there is every reason to conclude that this will happen. More than ever in the emerging atomic era these considerations will be of great value, indispensable to sound organization and operation of human relationships.

THE NEW DAY

It is necessary to recur from time to time to the fundamental principles upon which the economic-political order rests. We know that the ends of government are security, order, justice, welfare, freedom, and that the ends of the economic order are the production and equitable distribution of

[2] See L. K. Frank (ed.), "Psychosomatic Disturbances in Relation to Personnel Selection, New York Academy of Sciences, *Annals* (1943); Beardsley Ruml, *Tomorrow's Business* (1945).

marketable goods and services among men under equitable conditions.

Liberty, security, welfare, loom large in the ends of all social groupings. At times it is fundamental to take a fresh look at these guiding principles and considerations.

In America where a free society, both political and industrial, is of characteristic importance, it is of especial value to keep these goals in mind. Never was this more important than in the atomic age upon which we now enter. It would be treasonable for those who have examined this terrain to fail to call attention to the dangers and opportunities that lie before us as we advance over mined territory.

At the threshold of the atomic era we encounter new and very difficult problems in the organization on all levels of common human rights and the consent of the governed, the basis of protection and development of human personalities. Far greater concentrations of power than ever before known are on the way, in fact at the door. The time within which basic decisions must be made is shorter in the future. As never before elements dealing with atomic energies will confront each other.

An analysis of recent trends and of emerging forces leads to the conclusion that we are confronted by difficult but not impossible alternatives:

1. One world or none.
2. 100 percent democracy or none.
3. Unity in the fundamentals of civilization — or no civilization.

Difficult as it is for the mind to compress these alternatives and fit them into a pattern of civic life, nevertheless we are swiftly moving toward fateful decisions.

1. *One world or none.*

If we cannot organize a jural order of the world establishing peace among peoples, there is every probability that the forces of destruction constantly growing more formidable will bring about universal calamity. No one can now prove such an outcome but the probabilities and possibilities of destruction are constantly rising around us. On the other hand, our constructive powers are constantly increasing. The mind is still king. There is sound reason to believe that human reason will be able to formulate implements that will put an end to anarchy and establish world order and peace. It cannot be too strongly or too often stated that world order does not mean the end of self-government, either public or private government. On the contrary, when the threat of war is removed, autonomy will flower as never before in many forms of human association with security and opportunity for development such as has never been known. These groups will not possess the right to do whatever they may please, but this right was never in their hands and cannot be in a world of law.

2. *100 percent democracy or none.*

It becomes increasingly clear that the implications of democracy are not confined merely to legal relations in the narrower sense of the term but extend to economic and social relations in the broadest sense of the term. A modern bill of rights must include not only legal rights but economic and social rights. Corresponding responsibilities go with these rights which are in no sense purely negative, in no sense merely immunities. The dignity of man, the consent of the governed, participation on an equal basis in the life of the community, have little or no meaning, unless those who possess these rights have ways and means of using them effectively in a real world. There was a time when despotic government was the foe of democratic rights, and, consequently, legal ways of protecting rights against autocracy were the order of the day. Yet even in these times a great battle cry was that of "taxation without representation is tyranny." This was the slogan of taxpayers, however, when land was the chief form of property.

With the rise of an industrial age naturally democratic rights center around industrial situations. Wages, working conditions, living conditions, are now as important to the mass of the community

as taxation was generations ago. Government may become an object of displeasure in our times not merely by doing something oppressive but by folding its hands and doing nothing at all, or very little, or not enough. The right to be undernourished, the right to live in a doghouse, the right to work twelve hours a day, the right to suffer from the accidents of a mechanical age — these are only a mockery of freedom. Men will not long be deceived by legal forms that obstruct justice, welfare, liberty in the real sense of the term.

It becomes increasingly clear that democracy cannot survive unless it is adjusted to the needs of new times. If democracy cannot meet the challenge of the new day, it must give way to some other competing form, even if dictatorial and tyrannical. A democratic government cannot survive unless it can guarantee an order in which justice is done in the social and economic fields. Attacks upon despotism have a hollow sound if they are merely means of escaping a fair distribution of the gains of civilization. Twist and turn the argument as you will there can be no escape from the logic of democracy which brings into human life the recognition of the dignity of man, the fundamental equality of men, and the formulation of such conditions as may be necessary for the pursuit of happiness. Unless all this is understood and spelled out plainly in the lives of multitudes of men, there is in clear view the dissolution of the theory and practice of traditional democratic institutions. This may seem to be a harsh way, but we need not deceive ourselves by wishful thinking as to other and some more pleasant alternatives. We must face the fact that the alternative to democracy with a social and economic program is fascism or communism or some other doctrine which promises, however incapable of performance, what democracy does not produce.

Thus the alternative is 100 percent democracy or no democracy.

3. *Unity in the fundamentals of civilization — or no civilization.*

Viewing the diverse cultural patterns of the modern world, the various systems of religion and institutionalized idealism, each long and tenaciously held by millions of devoted followers or worshippers, it might seem that an agreement upon any significant fundamentals is beyond the reach of reasonable hope. Yet, on the other hand, it is equally difficult to see how the emerging world of peace, prosperity, progress can develop without some deeper and broader understanding of what is common to mankind. What does the world community have in common? How can there be a common code unless there is a common agreement upon values basic to the lives of all men? It may be said that a common creed including all religions of the world is impossible of attainment. The diverse creeds, the rituals, the symbolisms, the customs, the devotions, of too many types are involved to make even a working hypothesis plausible.

However, it is not impossible that behind the creeds and the cultures of men there may be found guiding directives pointing to common values and common ideals. Modern methods of communication, of transportation, of education are all developing with such fantastic speed that there is reason to have some confidence in the development of a world community with common hopes and aspirations. These patterns may fit into a type of idealism which in turn fits in with a jural order of the world and with an industrialized democracy. We know now that cultural patterns are not inherited biologically but are transmitted from generation to generation by processes of education and what is properly called acculturation — a long word describing a long but universal process. We now know that the stranger is not necessarily an enemy. We now know that many of the hatreds, prejudices, antipathies, whether geographical, racial, or religious, (1) have no rational basis, (2) with modern methods of technology and education may be fundamentally altered. Even the most primitive groups learn to use the results of modern mechanistic development with relative speed. Likewise scientific methods applied to cultural patterns may also produce surprisingly rapid developments.

What is lacking is not the technical ways and means but the will to do so. What can be done in the way of re-education was abundantly demonstrated by the Fascists in Italy, the Nazis in Germany, and the Communists in Russia. But it is not necessary to pay their price for the desired end.[3]

The question may of course be raised, who has the will or the authority or the power to deal with the mass of mankind or what patterns would be imposed if there were authority? It is at this point that we come back to the original assertion of the importance of creating or of helping to create a world community in which reason, justice, order, freedom, are dominant factors. This is not the occasion to set down the ways and means of achieving this goal, but it is the time and place to assert that without some agreement upon the fundamental patterns of world civilization, the humanity we know is likely to be shaken to pieces and destroyed by its own lack of central cohesion. The world is moving at such a phenomenal pace in science, technology, education that vast changes are not only possible but, in view of the time element concerned, imperative. There will not be found force enough or officials enough to maintain the peace and harmony of the world unless there is a broader basis of agreement on the goals of civilization and unless there is a way of preventing the growth of poisonous and malevolent types of individuals or of groups who may hurl destructive forces at the heart of mankind.

The new synthesis will not be easy to bring into being or effect. It will include the best elements in capitalism and the best elements in communism, the best elements in religion, the best elements in science, and the best elements in nationalism. Out of it could come a new faith in the future of mankind. But an alternative is titanic struggles that involve the whole world in savage destruction.

Can religion rise to these heights; if so, how and when? Can science supply the spirit and the symbolism; if so, where does it start? Can philosophy supply the true pattern?

The world is groping toward a light it cannot find, a hand it cannot reach, a beam of faith it cannot yet find and follow. Finally, it is of such materials as have been here presented that the new civic education may be woven. We can transmute the wealth of experience and tradition into faith in a finer and nobler future. But we cannot put the new wine into the old bottles. We cannot commit ourselves to the counsels of Doubting Castle, but must press forward toward the beckoning heights illuminated by experience, reason, faith.

[3] *See my The Making of Citizens.*

General Education for an Industrial Culture

BY H. FREDERICK WILLKIE

WITHIN THE past generation we have seen the men of industry achieve the incredible, economically and technologically speaking, with the cultural and philosophical backgrounds of juveniles. This is not enough for the future. A new world lies ahead of us and all about us, but it will not develop of itself; it must be shaped by men and women. I have put down the following thoughts about general education because I believe that it must eventually become the chief instrument for the development of these men and women.

In view of the increasing barrenness of strictly technical education, perhaps industry has much to gain by absorbing more and more men educated in the best of a liberal tradition — flexible, well-informed, light on their feet intellectually, broad specialists capable of developing in any direction as opposed to narrow experts who know all the answers — without understanding many of the problems. Yet where, today, are these men and women being educated?

I. THE PRESENT STATUS OF LIBERAL EDUCATION

A reassessment of the values of liberal education is now underway. This is wholesome if we really are willing to break with tradition, if we believe honestly in what we are doing, and if we have the inherent values in our present culture which are worthy of preservation through education. It is necessary if we are to rationalize an increasingly materialistic way of life, if we are to absorb industry and commerce into a social matrix which is, historically, primarily agricultural; it is doubly necessary if we are to make a place for science in our present way of life. But this reassessment will become a sterile fad if we depend solely on educators for a leadership which they have been slow to manifest in the past, if we do not analyze our culture in terms of broad human needs instead of arbitrary educational "values," and if we perpetuate the authoritarian thinking as well as the authoritarian organization so characteristic of current higher education. Let us hope that this revaluation will yield something more than a new name, general education, under which the old abuses and the old fallacies are concealed.

I hope that I will not appear unduly critical if I adopt, as a point of departure, some of the inadequacies of liberal education as it is now practiced in many of our colleges and universities. If the reader will remember that I speak as an industrialist and a trustee in more than one university rather than as an educator, but that my sympathies are ultimately very strongly aligned with liberal education, perhaps he will take my remarks in the spirit of tolerance and good will. Critical evaluation is only the first step in constructive thinking.

II. OBJECTIVES

We hear it repeated that general education "prepares young people for life," that it "produces good citizens," that it educates the "*general* student" — whatever that may mean — that it "leads to the good life," that it "creates the good

man" who, no doubt, is intended to populate the "good life." And so on. These objectives are sincerely accepted by many of our educators. To my mind, they are sentimental and unrealistic; they reflect assumptions which are untenable in our day, if indeed they have ever been tenable, even under the monasticism which fostered them. They sound attractive, but that is because they are general to the point of obscurity.

Almost unanimously the so-called progressive educators condemn vocationalism, simultaneously insisting that students be prepared to "live the good life." This attack on vocationalism is promising, so far as it goes. But how is the liberally educated man to live at all, let alone live the good life? This question may appear impertinent to those who would reserve culture for the elite and exclude the Philistines; it may fail to disturb the neurotic escapists; but it is a vital question indeed to those students who soon discover that no community is so set up at present that one can "live" a liberal education, that the link between understanding, as experienced in the liberal arts, and life, as experienced outside, is never closed — unless the rare student ultimately closes it himself, years after his formal education has ceased. Later we will return to this question of objectives in more detail; for the present I am interested only in indicating their relatively nebulous quality. If I seem too impatient with the objectives of general education, let it be recalled that the basis for the success of both vocational and professional schools is precisely that they have defined and articulated clear, effective, and socially acceptable objectives — limited though they may be in scope.

III. THE ORGANIZATIONAL DYNAMICS OF HIGHER EDUCATION

Although the objectives of liberal arts colleges may be distinct from those of other schools, they are all organized in a similar fashion. American universities still retain some of the forms of the old monastic orders, the Medieval universities, and the Renaissance court; it is too bad that many of these forms are negative rather than positive and dynamic. They tend to stifle if not to smother completely real intellectual growth. In too many universities one finds that the more modern elements of industrial exploitation or the ancient restrictions of religious hierarchy, or both, are carefully preserved; in fact, current administrative policy within educational institutions springs directly from a combination of these elements.

As a result, the faculty members are often anything but free agents. The lower ranks of instructors are widely exploited, paid little, and forced into mass-production teaching techniques which make a mockery of a high calling. Although their fortunes fluctuate slightly with the times, these men eventually constitute the nucleus for a disgruntled, frustrated, small-minded intellectual proletariat. By the time they are promoted, many of them, rather through the faults of the system than by any fault of their own, are unfit to teach on any level. Meanwhile, the upper professorial ranks are well padded with men who can be counted on to demonstrate their loyalty to their institutions by agreeing with their administrations. Too seldom are these men advanced because they are outstanding researchers or teachers, or both; too often it is because they have published pseudo-research or academic minutiae, because they excel at institutional politics, or because of sheer endurance or inertia. At the same time, these men are not often developed by their administrations. They are controlled, by pressures of one kind or another, to such an extent that free, effective teaching on a professional level is blocked and thwarted. These men are the "employees" of an institution; they are often handled by personnel methods which were abandoned by progressive industry a decade or more ago. Please understand that I do not suggest a Machiavellian conspiracy among administrators to exploit the faculty — although the petty policies of the martinet's mind dominate university procedure with distressing frequency. Principally I blame the professors themselves, many of whom

have fled reality to find sanctuary in the academic world.

Department heads have a tendency to become ever more the instruments of the administration, less and less the representatives of their departments. A premium is put on their ability to do detailed, routine work; scholarship and genuine intellectual leadership suffer as a consequence. It is increasingly uncommon, for instance, to find a real scientist heading a science department, or an outstanding literary man heading a department within the humanities. The department heads begin to resemble the so-called working-foremen in industry; they are the busy clerks, the pushers; they would like to align themselves with the administration, but are neither fish, flesh, nor fowl. Only rarely are they leaders and developers of men.

The deans are frequently department heads who have served faithfully and conservatively. They have dug well into the groove. They are completely administrative, which is to say lacking the integrity to deal with intellectual or personnel problems except through what are euphemistically referred to as "channels." They hope to be college presidents one day. Liberal arts deans seem to be particularly unfortunate in that they seldom have a research reputation to sustain them, they suffer a disadvantage in competition with the more aggressive and publicly recognized deans of the professional schools which now get so much attention, and they appear to be recruited, all too often, from teachers' colleges where petty politics and pedagoguery are mistaken for the capacity for real leadership.

University presidents, with few inspiring exceptions, are retired deans. Like many industrial factotums, they rest on their laurels and are content that their word is law — from the top down. They serve a board of trustees with the same servility and the same insecurity as do industrial presidents in many companies where the board of directors really make the policies — which should generate from beneath and grow under the care of the administrator. Good university presidents are rare indeed for these men, ideally speaking, control the growth of the entire cultural and professional matrix underlying our society.

The students — around whom education should center — now suffer a disadvantage in the field of general or liberal education. At present, they constitute, more often than not, the culls from the professional schools; sometimes vocational indecision puts them at a temporary disadvantage compared to professional students. Hence much of the febrile and precocious philosophy so palatable to the frustrated student who prefers to glorify the artists and social scientists with a message about the terrible state the world is in, rather than to learn to cooperate toward solving man's more immediate problems. Furthermore, little effort is now made to *select and develop* students fitted for general education. There is almost no effort made to recruit fine minds; the universities take what comes along in the liberal arts. A highly selective procedure is now not only possible but necessary in the face of universal overcrowding; if some such selective process is not soon adopted, all branches of higher learning face the danger of succumbing to mass-mediocrity. While of course even mediocre minds should receive all the education possible, selectivity should increase as opportunity appears; thus the general level of liberal arts students can be upgraded gradually and in fairness to all.

IV. PHYSICAL FACILITIES

Perhaps the colleges of arts and sciences are misnamed, for wherein do they reflect the arts and the sciences? While progressive professional schools have taken full advantage of applied science, the liberal arts schools have, by and large, neglected to mechanize themselves, even to the fundamental extent of widespread installation of typewriters, motion-picture films, and sound-recording. Where, for instance, would medicine be today if medical schools ignored modern mechanical and scientific advance, and expected the professor to *draw out of himself* the entire range

of medical and surgical procedure? How would our engineering schools fare if they did likewise? Yet this is, in effect, what liberal arts institutions still do.

In general, this failure to modernize characterizes our liberal arts colleges and, to some extent, our entire university system. Obsolete buildings, covered with ivy, are still regarded as an academic asset. If education is as important as we say it is — and I believe it to be the most important aspect of our culture — then it merits an environment calculated on the one hand to take advantage of every phase of applied science and, on the other, to reflect the high moral and intellectual goals professed by our educators. While some universities affect elegance, this is seldom functional; on the whole university classrooms are obsolete, badly maintained, and apparently not designed to foster either teaching or learning.

The development of universities as genuine cultural centers implies the installation of physical facilities capable of expressing the noblest aspirations of the mind of man. If our society now supports better buildings for purveying nostrums and gadgets than it can support for the advancement and perpetuation of our culture — then we need to overhaul our sense of values.

V. EDUCATIONAL PHILOSOPHY

So far we have dealt only with externals, with the shell which should encase the meat of education. While this is not the place to review the entire philosophy underlying our present concepts of education, I venture to offer a few suggestions, which, it seems to me, should be considered by educators if general education is to have more meaning than the present liberal arts education for the men and women of industry.

First of all, the businessman or industrialist needs to be able to analyze his own culture. He should be able to think in terms of *all* the elements of his community — not just money, commodities, and prestige. Therefore, he must stop looking for simple commercial clichés which he can exploit, and *become genuinely creative*. This he will never achieve by way of the stereotyped, mechanical courses which are now the core of so-called technological or business-administration curricula. He must be thoroughly initiated into the creative arts and the pure sciences.

Liberal education, I have noted, does not teach people to be very articulate about their own world and their own times. In passing, it is perhaps relevant to call attention to the fact that the men of the late Stone Age managed to say some very powerful things about their world through paintings left on the walls of caves; with all our technology, our formal education, our planning and our science, can our system develop young people capable of saying anything as powerful — through any medium — about our own culture?

General education should be prepared to set up real values as opposed to the fallacious values which sometimes constitute the pedagogical stock-in-trade. Those studies which mirror the modern world clearly and truly do have real value, as opposed to the synthetic values derived from a culture sustained by a decadent European nobility during the past four centuries. To be sure the culture of the past had values of its own, and a study of those values will profit the student, but largely through giving insight into human motives, and in establishing cultural perspective. A study of the culture of the past is important, but only as a point of departure or as an adjunct to thinking, rather than as an end in itself.

Much of modern thinking about liberal education — and especially general education — appears to veer away from vocationalism. This is good — but it must be reconciled with the fact that young people are rightly concerned about how they will earn a living. Until this reconciliation is established, general education will have advanced little beyond the pattern of the conventional liberal arts. At the same time it should be emphasized that the current trend toward *training for a limited or specific vocation* is dangerous in the extreme. It threatens the very life of the intellect; it puts a premium on routine; it stultifies the creative thinking and creative working

which are essential to the intelligent application of any specialized technology.

The great contribution which general education can make to our liberal arts institutions is to make a liberal education *functional*, as opposed to *vocational*. This involves progress on two fronts: first, extensive research and experimentation which, in the field of educational dynamics, do not appear to have kept abreast of research in some other professions; second, the application of the fruits of this research to all phases of higher education, but principally in the development of professors who are more effective than many who now teach in our universities, men who are as competent in their technology as are surgeons or engineers, men who handle ideas in preference to facts, men who hold a high place in our economy and in our culture. The development of general education must indeed be predicated on the evolution of a new type of professor, a bigger, broader, more resilient character than the men who now predominate in our university faculties. We are on the verge of an era of tremendous scientific and technological advance; at the same time we are on the edge of philosophic bankruptcy. It is indeed time that the profession of teaching comes of age, for we need the leadership of great teachers now as we never have before.

Ultimately, all general education comes down to what can be done to develop the individual; the only valid measure of that education is, in the last analysis, how well the individual copes with situations for which *he has not been specifically trained*. In the past as well as in the present, we have been content to steep generation after generation of students in cultural materials which are obsolete; to develop attitudes which were invalid before the candidates received their sheepskins; to burden graduates with an education as dated as the clothes they wear to commencement. Therefore it is to be hoped that general education will inculcate principles rather than facts; that it will bring to bear every aid of modern technology to enable students to *apply* and *execute* these principles; that it will not attempt to turn out a finished product, but rather establish for the student a base of intellectual operation from which he can work effectively during an entire lifetime. Let us say that his work in college should first of all equip him to explore his own world regardless of how far its horizons eventually expand. And let us keep him in the habit of exploring his universe. Individuals, however, cannot be fully effective by themselves — even though they may reach a high peak of individual potential. They must live and work with other people. The task of general education is not completed until students have learned how to pursue enlightened self-interest, how to work together to serve the group, how to absorb friction and convert it into constructive effort; these things must be done on a serious and scientific basis, under skilled faculty guidance, and not, as at present, under the somewhat superficial guise of student activities. This is part of what I mean by making general education *functional*.

There is little doubt in my mind that some of the cultural dilettantism and intellectual naiveté for which the conventional liberal arts student is often criticized stems from the lack of functionalism in his education; he does not mature because he cannot understand what to do with his learning; he is at a temporary disadvantage compared with, say engineering students, who, in spite of cultural inadequacies, have early cultivated a professional sophistication and a strong sense of social security. It is unfortunate that a liberal arts education has become a luxury, largely because it is regarded as nonproductive.

As a matter of fact, the liberal arts hold the key to our entire culture. The defeatism sometimes encountered among liberal arts students and liberal arts faculty is not justified, except in so far as those people in the liberal arts lack faith in and understanding of the principles of general education. Proper education within the liberal arts field should develop, in the full sense of the meaning of these terms, the ability to use the methods of science, the capacity to read understandingly, and the ability to express one's self creatively through

both writing and speaking. Once students can do these things — not in an academic vacuum, but in a social medium — they have the equipment with which to do anything they wish. From then on they are limited only by their own imaginative capacities and the framework of the social economy within which they live.

I believe that these principles apply throughout all fields — history, political science, literature, languages, psychology, pure science. Modern man must always work in a social medium against a cultural background, and for that reason he should learn to use both cultural and social mechanisms to the full extent of their current effectiveness; perhaps I might venture to suggest here that the current effectiveness of these mechanisms is not very great, certainly not nearly so great as their probable potential — assuming man's willingness to develop them aggressively. Furthermore, the use of these mechanisms should be synchronized with the political, social, and economic aspects of world-culture, since from now on all educated people must be able to think not only in global, but in ever-expanding universal concepts. However, we must start with the little things. We must make an opportunity for students to read, to write, to understand in a functional way. We cannot go on chasing students through formidable bibliographies and assume that they know and understand the world of books. We cannot teach good citizenship, or culture, or democracy, or social awareness as such; these things are by-products of the systematic and controlled functioning of minds alive and young; these values accrue only as the results of doing many other acts, of thinking other thoughts, of experiencing many events, of seeking to satisfy insatiable curiosity. They are not instilled as a result of the dogmatism of the conventional educator, uninspired and uninspiring.

The other day I noted that *Hamlet* was to be played with a fine cast at a local theatre. I asked an engineer friend of mine if he were going to see it. "See it?" he asked, "Hell, I don't want to see it. I've read it." Such smug cultural myopia is characteristic of those whose education in the cultural fields has been nonfunctional, whether or not they are engineers, I might add. That man should not only have read *Hamlet*; he should have acted it, he should have made the scenery and stage-props for it, he should have studied its philosophic validity, he should have learned to project it from the printed page into a vivid, living concept. While of course his going to see it should be optional, his rejection of the stage performance should not be made on the basis of having once read the play; that attitude reflected not only his own lack of perception, but echoed some very superficial teaching in a very important cultural field. Had his experience with *Hamlet*, or with the drama as a whole for that matter, been functional, he would have welcomed an opportunity to recapitulate the vast range of rich intellectual and emotional experiences accumulated as a result of his own efforts to make a play a reality.

On the other hand, it is precisely because such schools as law, medicine, and engineering are functional that they are so well accepted in our society, where the "good man" of the liberal arts is recognized only as the "successful man" of the professions. It is indeed true that these professions have made themselves functional at the price of narrowing their respective scope, commercializing their wares, vesting their professional interests ever more securely. But at the same time their functionalism is undisputable; they are effective in modern society; they are so effective that in many institutions a liberal education has practically been subordinated to their preprofessional needs.

Although these professions may be closely geared to society, or to industry, as the case may be, the danger is imminent that they will occupy themselves more and more with technology, less and less with the basic study which underlies all professional work. We have only to look at the barber to see what happens when a given group interests itself exclusively [within] the vocational aspects of an activity; while the surgeons saw the

need for allying themselves with the pure sciences, with the arts, and with creative thinking, the barbers went right on making a living. Today the surgeon has a future unlimited, the barber only a striped sign to recall better days. And so the barber-surgeons were left behind once and for all, although even today it is only *constant emphasis by the broad thinkers in the medical profession that keeps a bare minimum of basic general education in our medical curricula.* Despite such emphasis, much of our technical training is dispensed without regard for teaching students articulation on a high plane, without sufficient cultural and social implications, and without enough stress on the development of the creative powers.

Consequently some of our professions become ways of making a living rather than ways of living. This will be increasingly true, unfortunately, if the accent on vocationalism continues to increase, and if we neglect the basic culture and the pure science underlying a liberal education. At the same time, our educators have the responsibility for making this culture and this science meaningful to the students, and meaningful to our society at large. After all, what the students must achieve is a vantage point from which to attack his problems, whether they be in pure or applied science, or both; the more emphasis placed upon pure science the better — although certainly most undergraduates are not destined to become scientists — and the less upon applied science or hack-research, the stronger our educational bulwarks will be. The student should see clearly the difference between functional education and vocational training, and he should realize that they are by no means one and the same thing. In brief, general education should become just as functional as the professions referred to above, but *without slanting people toward one vocation exclusively.* That is, our university staffs should work toward this end if higher education is to serve the best interests of a rapidly expanding industrial culture.

In the last analysis, the man who is most effective in the industry of the future will not be a narrow expert. The market will be flooded with these, left over from the present generation gone overboard on technology. They will be the barbers who stayed behind. Rather industry will need men who are broad thinkers, whose primary function is to deal with people. I say that industry *will* need these men; perhaps I should say *does* need them, for the technological problems now facing industry are already dwarfed by the human problems which must be solved. Therefore industry needs above all men who can assess human values, who can think in broad terms, and who understand how to apply advanced technology, science, and machines in order to accomplish what they want to do. Above all, these men need a philosophic maturity which transcends philosophy as it is now taught in most of our universities; they need to stretch their souls, even as the men of the Renaissance did, for now that the physical universe has been explored, they stand on the verge of a new world of the mind and the spirit. If they do not help to conquer it, we are all lost.

Whether the industrialist knows it or not, and whether or not he likes the responsibility, he is assuming increasing importance within our culture. He is one of the most potent of individuals, for he is one of the few who can actually influence the living and thinking of great masses of people. He has under his control great numbers of people during a considerable portion of their waking lives; he has them under his hand while they make their tangible contribution to society through their work, as well as under his indirect influence during the time when they are not working; he is in a position to educate more people than at present comprise the entire population of our colleges and universities; he has it in his power to direct research either into channels which will expand and enrich human culture, or those which will flimflam the public into believing in a multiplication of gadgets in the name of "science"; he controls the machines of production, the sources of raw materials, the channels of distribution;

he deeply influences political thought. If he uses these powers only for the accumulation of profits, it is very largely the fault of our institutions of higher learning that he does so, for they should have taught him better.

The industrialist can, if he will, exercise a function and an influence comparable to the clergy of the Middle Ages, or the nobility and the merchant princes of the Renaissance — except that the organization and the technology of modern society give him infinitely greater leverage on humanity than any Renaissance prince ever enjoyed. It also gives him a very sobering responsibility — a fact which accounts for much of our present industrial unrest; on the other hand, he has not been encouraged to take any very constructive action; our society has shown a tendency to drive him into a defensive position; the politicians feel more secure on the side of the numbers; the agencies which should build constructively now devote themselves to picking up the pieces.

In the future the men of industry will have to take this responsibility whether or no, if an industrial society is to develop dynamically. Therefore, it behooves our universities to educate people for industry as broadly and as deeply as possible — and let us not fool ourselves into believing that we are now doing that. We have not yet begun to exhaust the possibilities of philosophy and psychology, of instructive techniques, of organizational dynamics. We have not gone very far beyond the blind authoritarian educative methods of the Middle Ages if, indeed, we have equaled them; our present educational systems appear to inhibit learning almost as much as they encourage it; we have yet to come of age and develop a mature concept of the relationship between men and society, men and industry, and men with one another. With the crumbling of strong religious influences on our society, we have turned blindly to technology without giving much thought to basic underlying philosophies. It is ironic that here where so much emphasis is put on education, we defeat it at every turn; learning has not held the imagination of our people. As a result, the children of illiterate Chinese peasants know more of the meaning of life than do ours, for all our universal schooling. We need to constantly remind ourselves that there are not now, nor have there ever been within historic times, any limits to the possibilities of the human mind.

Perhaps general education for the people of industry should de-emphasize teaching about the world as it has been and shift the stress to a realistic treatment of the world as it is, and the world as it should be. Our universities should not shrink either from an objective and searching analysis of our present society, nor from projecting glimpses of what should be; the capacity for envisioning the ideal and working toward it is now far more necessary than multiplying the intricacies and complexities of an already overdeveloped technology. Certainly a roster of the world's great minds would consist mainly of those who tried to take up the slack between *what is* and *what should be*; we need more and more of those minds today, and the only hope of developing them seems to lie with our teachers and our institutions of higher learning, and, specifically, within the area commonly regarded as belonging to general education. If there are great teachers within this area — and I am sure that there are — then their task is to select fine minds and develop them to the point where they have the courage to attack the problems of our modern world because they are vital and worth solving, rather than to encourage their students to stay safely within the protecting shelter of academic busywork because that leads to a degree, or a soft job, or the questionable acclaim which comes from acquiring a shallow and synthetic intellectual culture.

The Teaching Profession and Labor Unions

BY SAMUEL P. CAPEN

MY THESIS can be stated very briefly. Teachers, as teachers, should not join labor unions. Bodies of teachers should not become locals of either the American Federation of Labor or the Congress of Industrial Organizations. Nonunionized groups of teachers should not form alliances with national labor organizations for the purpose of bettering their economic condition.

The recent tendency among teachers to cast in their lot with organized labor is unfortunate. It has already damaged the teaching profession. Unless it is checked it will surely cancel the gains in professional status and public recognition which teachers have slowly and painfully won during the last generation. The issue is one of great moment both to teachers and to American society as a whole. Strangely neither the seriousness of it nor its meaning seems to be understood by the teachers or by the public at large.

The principal reason against the unionization of teachers and their affiliation with national labor organizations lies in the nature of their calling. Teaching is a profession. Professions are not more honorable than other occupations, but they are different. They have certain peculiar characteristics of which the following are the most conspicuous.

A professional practitioner, once he has mastered the basic knowledge and techniques of his craft, does not apply them in rule of thumb fashion. He must constantly recast and recombine the intellectual materials which he uses to meet new problems and situations. He is obliged constantly to exercise his independent judgment and to assume a large measure of individual responsibility. Very little of his work can be routinized and performed mechanically under orders of a superior. In all of it there is a considerable element of art.

All professions serve the public. Public service is indeed their major purpose and their justification. Consequently, the prospect of pecuniary gain is not — or at any rate should not be— the ruling consideration of those who practice them, or the principal inducement that attracts new recruits. All professional practitioners naturally are interested in securing through their work a comfortable livelihood. In fact, unless a profession assures at least this much to its members, it shortly becomes depleted. But even the small handful of members of a few professions who earn large incomes commonly practice their callings less for the money reward than because of an absorbing interest in the work itself.

Both the motivation of professional practitioners and the independent responsibilities laid upon them emphasize the necessity for agreement among them concerning the forms of activity and the methods of practice that are consonant with their obligations as servants of the public. Such agreements are known as professional ethics. Every profession has developed more or less formalized codes of ethics. In some of the older professions the codes are specific. Violations are punished by exclusion from the profession. The newer professions generally content themselves with com-

mon understandings regarding professional conduct and visit no penalties except disapproval upon those who transgress these understandings. But whatever the penalties invoked, it is important to note that the rules of professional ethics are not imposed upon the profession from without. They are evolved by the professions for the improvement of professional practice and hence for the improvement of the service to the public; and they are for the most part enforced by the professions. Professional associations — of which there are many in all professions — nearly always have the double purpose of promoting proper professional conduct and elevating the standards of competence of the members.

The position of the professions in a society based on the principle of competition is also unlike that of most other occupations. Individual members of professions may and do compete with other members, but the competition is a rivalry in efficiency. Each competitor strives to *give* more, to do a better job, to win advancement as a reward of merit; not to get something away from somebody else. There is no competition between members of a profession and those engaged in other callings. A profession as a whole competes with nobody. It is not against any employing body or any other group in society. It cannot be, because its purpose is public service.

In respect to their purposes, their methods of work, their ideals, and their relations to those who furnish them the means of livelihood, the members of professions are in a totally different situation from members of labor organizations. Those organizations exist primarily, and properly, to secure material benefits for their members. They must of necessity be in competition with other groups of citizens. When they cannot achieve their purposes by other means, they have at hand the instrument of the strike. The weapon of the strike gives them their competitive power, whether they use it or not. The American people have long recognized labor's right to strike — although the right to strike against the government or against the public safety is not generally recognized. But the strike is always against somebody, some portion of the public large or small. It is a weapon of warfare. For the time being the party struck against is the enemy.

Individual citizens may feel hostile toward a profession. But no large group of citizens is ever hostile toward any profession so long as the profession lives up to the ideals of self-improvement and public service to which it is committed. And no profession can assume an attitude of hostility toward the public, or toward a particular segment of the public, and continue to claim recognition as a profession.

What has been said applies to the incompatibility of the purposes and character of labor organizations on the one hand and of the purposes and character of the professions — all professions — on the other. The teaching profession is in a class by itself among the professions. It has peculiar obligations, not shared by other professions, which demand inexorably that it keep itself clear of entangling alliances with labor organizations, or indeed with any other organizations of citizens formed to promote special group interests. Apparently these obligations are not understood by some members of the profession. I venture, therefore, to summarize them.

Other professions serve only a portion of the public: the sick public, or the public which must have recourse to the courts, or the public which has construction in hand, or the public in need of relief. The teaching profession serves the whole public. Literally no one fails to be a recipient of its services at some time in his life. Moreover, the vast majority of teachers are public employees, whose salaries are paid from public funds, toward which all taxpaying citizens contribute.

The nature of the teacher's service is likewise peculiar. The profession is charged with the custody and transmission of the social heritage of the nation and the race. In the process of transmission many of its members cannot avoid the interpretation — in the light of their own knowledge and judgment — of current happenings, nor

can they avoid the attempt to relate these happenings to the experience and standards of value of the past. This is particularly the case with teachers of the social sciences and the humanities.

Is there anyone who does not believe that the social heritage should be passed on in as unbiased a manner as possible? Or is there anyone who would think it proper for a teacher to take advantage of his position to present strictly partisan interpretations of contemporary controversial issues? Among the most controversial of the issues of the moment are those which concern labor and management and the relations of both to the general public. All parties to these controversies are eager to enlist supporters and especially supporters who in some degree influence public opinion. The teaching profession has fought for what is known as academic freedom not in order that its members might be unchallenged propagandists, but in order that they might be free to seek the truth and proclaim it, to be critical and impartial amidst the storms of partisanship.

It is all but inconceivable that an avowed partisan of one side in a fierce social conflict can interpret both sides without prejudice. And even if an occasional partisan can rise to this high level of judicial behavior, few persons will believe that he can. In a period when economic, political, and even ethical concepts are the subjects of such widespread discussion and are exercising such a decisive influence upon our population, the teaching profession can play no favorites. If it is to retain the confidence of the people, it cannot even have the appearance of playing favorites. The touchstone of the profession's integrity must be its official impartiality.

I am persuaded that the following are categorical imperatives for the teaching profession. It cannot properly join forces with any other exclusive groups within the body politic. It cannot properly make common cause with labor or capital, with Democrats or Republicans, with any sect or religious body, or with any other collection of citizens organized for purposes that lie outside the purposes of the teaching profession itself. To further its own interests it cannot even make offensive and defensive alliances with any of these groups in the hope of enlisting their support. Its allegiance must be to the whole public, never to some partisan body within the state.

The force of these imperatives is made manifest by the recent epidemic of teachers' strikes. Not all teachers' strikes have been called by organizations which are formally affiliated with labor unions. But the union nucleus has been a prominent factor in the direction of most of them. And the tactics have been union tactics: the surrender of the right of individual action to the decision of a leader, the delivery of an ultimatum to the employing authorities, the picket line with indignities bordering on violence offered to dissenters, the instigation of sympathetic strikes by unrelated labor organizations, the utter disregard of the public interest while the economic battle runs its course.

A teachers' strike is, of course, an anomaly. But it is worse than an anomaly. It is a triple act of treason. It is treason to the ideals and purposes of the profession. It is treason to the innocent youth whose intellectual and moral welfare has been committed into the teachers' hands. It is treason to the lawfully chosen agency of the public, the government, which teachers are sworn to uphold. An action more demoralizing to everyone concerned — the strikers, their immediate victims, their ostensible opponents, the general public — is impossible to imagine. Whether the strikers win or lose their proposed objective, everybody loses something of more permanent importance; and the strikers' loss is the greatest and most nearly irreparable.

The leaders of some labor unions have declared themselves as opposed to teachers' strikes. The legislature of at least one state has also passed an act making strikes of public employees illegal. It seems probable that other states may follow suit. But if certain persons should now contend that

the incidence of teachers' strikes has no bearing on the issue of unionization, I believe they would be mistaken. Even though there should never be another — a consummation which is unlikely, although devoutly to be wished — the strikes that have occurred already throw a revealing light on the question of the propriety of any organic connection between a body of teachers and a labor union. The strikes never would have occurred had not the striking teachers accepted the labor union concept of the relation of any group of employees to the employing agency. They represent the willingness of the participating teachers to become a class organization, and to share the partisan hostilities and the partisan support which such a separatist alliance entails. In a profession dedicated to the service of the whole public without discrimination any such fractional loyalty is a repudiation of the profession's most solemn obligation.

In the United States no profession is reformed from the outside. If reform is called for, it must proceed from within. If discipline is required it must be self-discipline, applied with the consent of the majority.

The time has come for the teaching profession to re-examine its position in the whole scheme of modern American life and to reaffirm the principles to which it is committed. The time has come for it to bring the force of an aroused professional opinion to bear upon those misguided members who through divided loyalty are fast undermining its repute.

A Course in Mathematics for the Purposes of General Education

BY R. W. BRINK

AT THE University of Minnesota in order to advance from the lower division to the upper division of the College of Science, Literature and the Arts a student must have completed certain group requirements. These are requirements in English composition or communication, foreign languages, social sciences, natural sciences, and public health. Presumably they are established to provide the tools for later study, to insure a minimum experience in exploring subjects apart from a student's fields of major interest, and to lay at least a foundation for his general education. Of all the subjects offered in the college, mathematics is one of the few that cannot be used in meeting the group requirements; philosophy, music, and fine arts are others. A freshman or sophomore may perfectly well elect courses in mathematics. But if he does, so far as meeting the requirements is concerned it is like rowing in a rowing machine instead of in a boat; he gets plenty of exercise, but it does not get him anywhere.

This situation is in marked contrast to the ideas that prevailed a half-century ago. Traditionally mathematics, foreign languages, philosophy, and literature formed the very core of a liberal education. If mathematics has lost some recognition of its general educational values, it is perhaps because of its almost too obvious claims as a tool of the sciences. If every student of engineering, physics, chemistry, statistics, or business requires mathematics as a tool in his profession, is it likely that this subject offers much in the way of general educational values? The plain answer is that as mathematics has recently been taught, these general values have been distributed through a long sequence of courses and have not received sufficiently explicit statement. The result has been that so far as general education is concerned, many students, limited to one or two courses in mathematics, have never reached the most interesting material and have failed to recognize the points of interest that they have passed. This does not in itself mean that the sequence of standard courses should be changed, for it is well directed toward the special interests of its students. But it does not provide an opportunity for the nonspecialist to obtain from mathematics all that he should obtain at a cost that he should be expected to pay.

In order to fill this gap in the standard curriculum, the Department of Mathematics at the University of Minnesota in the fall of 1941 first offered a terminal course in mathematics especially addressed to the general student. Certainly the idea of such a course is nothing new among mathematicians. Even less is it a novelty to give unified courses that combine topics from several branches of elementary mathematics. A survey of approximately 500 colleges and universities[1] indicated that the preponderant opinion is that the conventional introductory college course is more appropriate for specialists than for nonspecialists in mathematics. And many institutions have introduced new courses either in addition to the standard courses or partially to replace them.

[1] J. S. Georges and E. R. Hedrick, "Mathematics for Purposes of General Education," *American Mathematical Monthly*, XLVIII (March 1941), 189.

There is as yet little standardization of courses designed for general students. A number of writers have published suggestions for ideal courses, while quite aware of a large measure of disagreement[2] among their colleagues as to the objectives and content. It may be of interest to have a very matter-of-fact account of the course given at the University of Minnesota. At least such an account has the advantage that it can be realistic in describing what has actually been done at one institution instead of being merely a blueprint for possible action.

The college bulletin gives the following description:

> Mathematics 15-16. Elementary Mathematical Analysis. A course for premedical and other students who desire a survey of college mathematics including trigonometry, algebra, and calculus with emphasis on fundamental ideas rather than on technical preparation for more advanced courses in mathematics. (10 cred.; prereq. plane geometry and Course 1 or high school higher algebra.)

To a reader familiar with academic jargon the passage in parentheses means that the course is given in about 110 lessons and that it is open only to students who have had plane geometry and the equivalent of a year and a half or two years of high school algebra.

Since many students now come to the university with only one year of algebra there was some sentiment in favor of admitting such students to the new course. Manipulative algebra, however, is the very basis of communication in science and mathematics. It should form a part of general education in the most restricted sense of education shared by all. It was intended that the new course should be fast-moving but not superficial. Its scope would have been seriously limited and its main objectives could not have been realized with students who were quite illiterate mathematically. Moreover, since a very large proportion of good students do have higher algebra when they enter, its requirement secures a more homogeneous group of students in the course. It is true that in their elementary courses in mathematics some institutions mingle students who have studied higher algebra with students who have not had it. But, if we have learned anything about the administration of elementary courses at Minnesota, it is that this is a vicious practice, either boring to students with adequate preparation or bewildering to the unfortunates who have not had it. It is like studying Shakespeare in a class a part of whose members have not previously learned to read. In order further to insure preparation in algebra a placement test is given at the beginning of the course in Elementary Mathematical Analysis. Students who do badly on the test are either required or strongly advised to study algebra before being allowed to continue in the course.

In the bulletin description special reference is made to premedical students. The value of the new course was immediately recognized by other departments of the university and in particular by the departments of physics, physical chemistry, and others concerned in the preparation of students for the medical school. Its contents seemed to them more useful for the general student of science than anything attainable in the same length of time in the more conventional courses. The department of physics agreed to accept the new course as one of the possible ways of meeting the mathematical prerequisites for their special course in physics for premedical students. The department of mathematics welcomed this approval. Premedical students are above the average in general intelligence and alertness. With Elementary Mathematical Analysis especially recommended for premedical students we were sure from the outset of a good and numerous clientele, and could start the new course as a going concern.

At the beginning the great majority of students in the course were taking the premedical curriculum, and even now those students are in a slight majority. Increasingly, however, other departments have come to recommend the course as

[2] Cf. Oystein Ore, "Mathematics for Students of the Humanities," *American Mathematical Monthly*, LI (October 1944), 453; J. L. Synge, "Postcards on Applied Mathematics," *American Mathematical Monthly*, XLVI (March 1939), 152.

offering desirable training for their major students, and students with major interests in approximately twenty different fields are now taking it, either on the advice of their departments or on their own initiative. The special interest of many of our students in medicine often colored the choice of illustrative and problem material. But it did not lead us to compromise with the fundamental objectives.

It is a somewhat curious fact that the persons who are most active in planning curricula for the purposes of general education are, of all educators, those who are most insistent on seeing the immediate and specific utility of the subject matter that is taught. This insistence, or rather the reason why it is perplexing sometimes, may result from a confusion of the two definitions of general education: education so basic and demonstrably useful that it must be secured by all, or education outside the fields of a student's major work that extends the range of his interests and adds to his general competence. In any case, no subject is more used to meeting the challenge of direct applicability than is mathematics.

Very probably teachers of literature as well as of mathematics hear the question "What is this good for?" In a class in literature perhaps an acceptable answer is: "Isn't it interesting? Isn't it beautiful? Isn't it true?" In mathematics we can make this same reply, but in addition point to very specific applications that often lie outside the field of mathematics. In many conventional courses the values to be attained are not stated explicitly enough and students never perceive them. There is a complacent assumption on the part of some teachers that the students will believe that whatever is taught is good for them or it would not be considered.

In Elementary Mathematical Analysis we try to mention both the general goals and the specific points of interest as explicitly as possible and, above all, to point out the possibility and means of transfer to other fields than mathematics. Thus the students are told at the outset that one of the things that they are definitely supposed to gain from the course is the ability to read and write and speak correct English. One difficulty of teaching composition in an English class is that, while students there are often possessed with a great yearning to say something, they often lack anything very definite to say. In mathematics, on the other hand, statements of theorems and definitions and proofs and descriptions of results furnish excellent material for exact statement. The omission of an essential detail of hypothesis makes an entire theorem invalid, and incorrect terminology leads to complete confusion. Students in Elementary Mathematical Analysis are discouraged from making verbatim repetition of definitions and statements of theorems. But their statements in class and on paper are subjected to very exacting scrutiny as to logical and grammatical completeness and accuracy. A standard direction on mimeographed examinations is: "When a definition or other statement is required, write your answer in clear, exact, and grammatical language." One of the amazing and encouraging discoveries in teaching the course is that students can and do learn to scrutinize their language, once they understand that it matters whether they do so or not. It is the invariable experience that the first examinations produce the expected immature, incoherent, and often ridiculous statements, while at the end of the course the majority of students write like logical persons who have something to say.

Along the line of training in communication, some emphasis is given to the idea of mathematical notation as a language in itself. Considerable practice is given in the careful reading of passages in more extended English and their exact translation into mathematical notation. Attention is given to the compactness and clarity of mathematical notation and its susceptibility to manipulation. It may be a question whether translation to and from mathematical language belongs to general or to special education. But if some researchers in biology, economics, and other fields would master this art, they would not so often

have to seek help from their mathematical colleagues.

More generally, when a student in Elementary Mathematical Analysis asks, "What is this good for?" we try to tell him. So far as we can, indeed, we try to anticipate the question. We try to make the work interesting, to point out the symmetries and other beauty of the results, and to demonstrate their truth. But we try also to go beyond this and indicate at least the fields of application. As an illustration, consider the matter of the graphs of the trigonometric functions, in particular of the sine and cosine functions. Certainly their sinuous beauty is not difficult to see. Then it is shown how the graphs themselves reveal or contain most of the important properties of the functions, their amplitude, their intervals of slow and rapid growth, and, most important of all, their periodic or recurrent character. By way of applications, comes the portrayal in these graphs of many familiar phenomena: the voltage of an alternating current circuit, the carrier waves of radio transmission, the current in an ordinary oscillating circuit and the simple harmonic motion of a pendulum, tuning fork, or piston. Relations are mentioned between period, frequency and pitch, and simple examples are solved involving the wave-lengths of local broadcasting stations whose frequencies are known or of radar. By the method of addition of ordinates and its inverse, we can study the overtones and timbre of musical sounds, the fidelity of loudspeakers, and business cycles and other recurrent phenomena.

I do not mean that in Elementary Mathematical Analysis we actually study these applications, but rather that we indicate the fields in which they lie. In connection with many topics, of course, the applications call for little information outside of the student's common experience, and are treated with detail in the course. In still other kinds of material the teacher must occasionally say: "This is something that you will need later in the calculus part of the course." At least such a reference is to another portion of the same course instead of to a later course that the student may never reach.

Since one of the purposes of the new course was to provide a means of exploring or sampling the field of college mathematics, it was resolved at the outset to maintain approximately our normal standards of difficulty and rigor. Above all, we sought to avoid the pitfall of superficiality that has been the curse of most "survey" courses. The course should be mathematics and not about mathematics. Condensation was to be secured by the elimination of standard topics necessary primarily for more advanced work in mathematics. It was also resolved that the students should be genuine participants and not mere spectators. In practice this has meant that they are responsible for a normal amount of daily problem material and a reasonable technical proficiency. In the main, problems are shorter than those in standard courses, but many of them have real difficulties and involve the combination of several ideas and techniques.

I have never shared the notion that work — any work — is good for one just because it is hard. But I do believe that somewhere in his college course every student should be encouraged to grapple with really difficult problems and carry them through to a solution, provided that the material involved is intrinsically so interesting and valuable that there is some reward for the effort. This effort may provide transferable training of character, if not of mind. The opposite view and the fear of making students work hard are responsible for the dilution of many standard courses in some secondary schools. In my opinion, for that very reason these schools are the weakest spot in our American system of education. At any rate, in Elementary Mathematical Analysis we give students an opportunity to know the fine excitement of doing a substantial piece of work and getting a solution.

In choosing teaching material we sought and ultimately found a brief and well-written text which we supplement very greatly with mimeographed and lecture material. We preferred this

to using one of the many books on unified mathematics that are intended primarily to train for more advanced courses in the field. Most of all we avoided the other extreme of a book filled with cute asides that are intended to fascinate the reader. Nothing is more ponderous than a mathematician who sets out to be lightsome.

The unifying idea of Elementary Mathematical Analysis is the notion of function, that is, of the correspondence between the elements of two sets. This notion, which I suppose would be the principal theme of any such course, is the central idea of modern mathematics.

The course begins with an extension of the number system from the system of the natural integers to include positive and negative rational numbers, zero, irrational real numbers and complex numbers. There is no attempt at a philosophical definition of the positive integers nor would the definitions of irrational and complex numbers and operations with them be adequate for an advanced course. But students at least learn that a number system is the result of several extensions and that there are certain limitations and necessities involved in each extension. There is the idea, too, that numbers acquire meaning and standing as numbers only in connection with the operations that are defined along with them. By means of the Cantor-Dedekind axiom concerning the correspondence between points of a real number scale and the set of real numbers, we give elementary ideas on the density and ordering of certain sets, and lay the ghosts of such notions as "consecutive numbers."

The course plunges at once into the definition of a function and functional notation. Coordinate systems, graphs of functions, and the classification of functions follow. During the first term of the course the work is restricted mainly to simple algebraic functions. In connection with linear functions there is a respectable treatment of the analytic geometry of a straight line, including slopes, intercepts, most of the standard equations for a straight line, and graphical and algebraic solutions of linear equations in two unknowns.

Following a study of quadratic functions and their graphs and a review of quadratic equations, there is a discussion of more general algebraic functions. This part includes many of the theorems and methods contained in a college algebra course on the theory of equations, zeros and poles of functions, horizontal and vertical asymptotes, tangents and slopes by graphical methods, and problems in maxima and minima treated in the same way. The notion of average rate of change of a function, with the delta notation for increments is introduced as a preliminary to the definition of instantaneous rate and the derivative. The approximate computation of areas is treated by means of the trapezoidal rule.

Several topics are included in the first term that lie somewhat off the main line of function. One of these topics is that of determinants. Actual proof of the properties of determinants, and most of the applications, are limited to the case of the third order. But statements of the properties and of Cramer's Rule are given in general terms. Another subject that is especially appealing to most students is that of permutations, combinations, and probability. This work requires little in the way of previous technical training, but does demand considerable logical and analytical ability. It has contact with many situations of daily life, and, of course, is the basis of actuarial and statistical science. It convinces many students of what many of them had never suspected before, that mathematics can be fun. By studying the "law of averages" a student is at least qualified to read the sports pages of a newspaper more critically. The study of arithmetical and geometrical progressions is introduced if there is time. Applications are given to compound interest and simple annuity problems. Infinite geometric series are, perhaps unfortunately, the only infinite series considered in the course.

The second term is devoted to calculus and to the logarithmic, exponential, trigonometric, and inverse trigonometric functions. Reasonable fa-

cility is obtained in computation and in the use of tables. Emphasis is given to the graphs of the transcendental functions mentioned. In connection with logarithms, problems are given involving change of base and exponential equations. Such problems are perhaps especially necessary for premedical students. However, the same ideas are useful in many problems of finance, growth, and depreciation. The natural base of logarithms, e, is defined in this course not as a limit, but as that value of the base a, for which the slope of the graph of the exponential function, a^x, is equal to 1 when x is equal to zero. This definition involves intuitive notions of the continuity of the slope but is essentially as rigorous as the other, and leads easily to the formulas of differentiation.

As compared with an ordinary course in trigonometry, Elementary Mathematical Analysis gives much less attention to the solution of oblique triangles. Only the laws of sines and cosines are used, and in consequence the problems involve only relatively simple arithmetic. The course does not make surveyors of its students. But I hope that it does arouse their imagination, and reveals trigonometry as one of the means by which the mind of man can reach to inaccessible distances and make indirect measurements where direct methods cannot be used. The course is comparatively brief also in studying trigonometric identities and equations. Admittedly these are the topics that are the most useful for prospective mathematicians and that are most sadly neglected in some elementary courses in trigonometry. But they are slighted here precisely because their greatest utility is in more advanced mathematics.

Calculus is the center of interest during the second half of the course. By the end of the first half the students are so familiar with the ideas of average rate of change of a function, slope of a straight line or curve, obtained graphically, and the use of increment notation, that the passage to instantaneous rate of change and the derivative is very natural.

It is a curious fact that, while every standard textbook in calculus uses calculus to define such terms as rate, speed, acceleration, curvature, and area or volume of a region with curved boundaries, very few if any of the books are very explicit about the essential role of calculus in these connections. From reading them one would almost conclude that calculus is merely another tool by which the quantities in question can be computed. Few of them indicate that a principal function of the calculus is to define these terms, about which a person without calculus can have only vague intuitional ideas, and that they simply have no meaning until the calculus gives them some. Surely it is well for every inhabitant of the present world to recognize the source of the meaning of terms that he uses currently every day. On this point the course in Elementary Mathematical Analysis is more than ordinarily explicit.

In the calculus portion of the course the treatment of limits depends largely on intuition. While epsilons and deltas may be used, they are introduced casually and there is no attempt to secure mastery in their use. On the other hand, there is much insistence on accuracy of language in regard to the essential notions. There is, then, considerable compromise of rigor in favor of appeal to intuition. In both differential and integral calculus the work is confined to functions of a single variable except to some slight extent in connection with the differentiation of implicit functions.

Derivatives are applied in the course to problems in maxima and minima and in geometry. Differentials are used for approximate measures of change and error. Definite integrals define and measure areas and volumes.

Many teachers would doubtless prefer to limit the calculus in such a course to algebraic functions or even to polynomials. However, since many of the most interesting applications, especially in physics, do involve the elementary transcendental functions, they are included. Integration, however, is restricted to what may be called the fundamental formulas of integration that do not require the use of integration by parts,

partial fractions, or any but the simplest substitutions. While it is important for the young physicist to be able to use the value of the area under an arch of the sine curve or to find the slope of that curve at a given point, he does not often have to perform a difficult integration.

From the point of view of general education, the course in Elementary Mathematical Analysis leaves many gaps unfilled. These I charge off to a lack of time to do all that might be done and to an effort to compromise between the ideal and the practicable. For one thing there is no systematic treatment of the history of mathematics, though there is a great deal of opportunity to learn how mathematics is related to other sciences. Present trends in mathematical research are so far from the experience of students in the course that any effort to picture them would certainly degenerate into a meaningless flicker of strange names and terms. As new topics are introduced, passing reference is made to persons connected with them, and students at least hear such names as Napier, Descartes, Pascal, Newton, Leibnitz, Laplace, and Fourier.

Another gap that perhaps could be filled more easily is that there is no extended discussion of mathematics as a system of logic based on postulates that may or may not correspond to some physical situation. Unless such a discussion is carried to the point where there is genuine understanding it tends to weaken rather than strengthen confidence in the validity of results. It has been thought better to emphasize the logical structure of each individual argument than to stress the development of a complete system. Perhaps suitable teaching materials in this field can be developed and introduced into the course. A very formal postulational approach is usually dry and forbidding; we have preferred to err on the side of too little rather than of too much formality.

Since one of the purposes of the course is to conduct an exploration of college mathematics, we try to orient the students with respect to the conventional courses. In connection with certain topics, for example, the teacher says that they are a part of the study of Analytic Geometry and indicates the essentials of the method of that subject and how they differ from those of synthetic Euclidean geometry. Similarly the students learn what parts of their work belong to calculus and the other branches. Such an orientation does not destroy the unity of the course, but tends, if anything, to increase the sense of relationship among the various topics.

As a result of the exploration made during the course students not infrequently decide that they wish to continue in mathematics. We provide them an outlet into our sequence without loss of time or credit by allowing students who finish Elementary Mathematical Analysis to by-pass the regular courses in trigonometry and college algebra. That is, this course is counted as an acceptable prerequisite for our course in analytic geometry. It is true that students who enter our sequence in this way are deficient in many of the necessary techniques of algebra and trigonometry. These are partly balanced by their previous introductions to analytic geometry and calculus. A number of very respectable majors in mathematics have come up by this route.

Some of the ideas underlying the course have been stated before:

> It is the special power of mathematics to recognize the essence of a problem regardless of its immediate origin, to formulate quantitative definitions that really correspond to intuitive notions, to supply a tractable notation, and to analyze the relations existing between the elements. . . . We must provide elementary terminal courses for the purposes of general education. These courses, if less complete in the techniques necessary for continuation courses, should be rich in essential ideas. They should insist on precision and clarity of statement. They should indicate the necessity in any system of thought of exact definition of terms and provide examples of definitions that clarify and correspond to one's intuitive notions. We must not lead the student to believe that mathematics is vague or inconclusive by attempting to include too great a range of material or any material too remote from his experience. The time was when it was believed that the world could be saved by education — any education. But we have learned that education built on authority alone can work as efficiently for evil as for good. If education is to contribute to our national welfare, it must conduce to independence of

thought, by which the individual is able to examine for himself the assumptions and conclusions behind dogma.[3]

I believe that the course in question does tend to create an independent and critical attitude.

In the six years since its introduction, Elementary Mathematical Analysis has enrolled about 1,750 students. Thus, while this has never been one of our biggest courses, it has been a thriving and active one. Into it we have put some of our best teaching effort. I suspect that that is an especially necessary ingredient in such a project.

[3] R. W. Brink, "College Mathematics during Reconstruction," *American Mathematical Monthly*, LI (February 1944), 61.

Because some of our best teachers have taught the course and because we wish to foster initiative and spontaneity, beyond prescribing a certain outline of minimum content we have left as much latitude to individual instructors as possible. For that reason the account I have given is probably colored to some extent by my own experience with the course. I believe that it does give a fairly typical picture. One thing is certain; our faculty likes to teach the course. With all its limitations our net impression is that Elementary Mathematical Analysis is one of our department's most successful recent innovations and that it is a good approach to the problem of teaching mathematics as a part of general education.

General Education in a Work-Study Plan

BY W. BOYD ALEXANDER

WHAT, indeed, does general education have to do with students spending half their time on jobs and half in school? On the surface, this seems to be the ultimate in vocationalism; and a work-study plan, whatever else it may do, certainly does provide opportunity for vocational exploration and the acquiring of vocational competence. But the period off-campus is not only a job. It is a sample of life as a contributing adult in society. It offers an opportunity to study American life from the inside and at firsthand.

This opportunity, though it need not come through a work-study plan, seems to me to be an essential element in general education. Abstract ideas must be the stuff of education, for it is only through abstracting, classifying, organizing, that we grasp and control the chaos of raw facts. But these abstractions exist so that we can handle the facts. They are not and must never be considered as ends in themselves. For if they are so treated, we have structures of logical nonsense, minuets of meaninglessness, learning that is encyclopedic but helpless to direct intelligent action, and dogmatism that sets itself squarely against any advance in man's knowledge.

Antioch College has defined for its own use what it considers the common ground of a liberal education should be: "the knowledge and attitudes all educated men should share if they are to build a cooperative society that makes possible increasingly greater capacities in greater numbers of people."[1] This is education for use. It implies two responsibilities for the college: to transmit those abstract ideas and concepts which men through the centuries have found to be useful and excellent; and to help students fit those abstract ideas into their daily living. This involves providing students with opportunities to learn a great deal about daily living and contemporary society, to test classroom abstractions against it and to practice using them in it.

Thus some kind of directed observation and participation in life beyond the academic towers becomes essential. A work-study plan is not the only way to get it, but it seems to us a natural way. Probably half the college students in the United States work during their summers or at odd times in the college year. A directed work-study plan changes this experience from an interference with general education to an important part of it.

Such a work-study plan, of course, must be something much more than holding a job and letting an environment flow over one. It demands an aggressive and thoughtful interest in the environment in which the student finds himself and a conscious attempt to make connections between this environment and what he has learned in the classroom. The college can foster this interest in any number of ways. The selection of experience can be made in terms of what will broaden a student's limited horizons or further his personal growth in effectiveness or help him find the channel through which he can make his learning useful in society. Counseling can bring out what the student may hope to get from the off-campus experience. The student can be asked

[1] Algo D. Henderson and Dorothy Hall: *Antioch College: Its Design for Liberal Education* (New York: Harper and Bros., 1946), p. 67.

to write an analysis of what he is getting from the experience, while he is engaged in it. Informal and formal exchange of experiences and observations can enormously expand the process of learning. The off-campus experiences can be drawn upon in the academic courses themselves.

Antioch College was the pioneer and is probably still the leader in using a work-study plan for general education; its first and still most common use was almost entirely technical-vocational. But Antioch, though it began the process of using it with *all* students, poets and philosophers as well as accountants and engineers, still is only at the beginning in integrating the off-campus experience with the classroom.

The first question in using a work-study plan for its values in general education is: To what kind of classrooms do the students return from their off-campus experiences? Antioch students return to classrooms in the liberal arts and sciences, and especially pertinent here, to a series of general required courses which were instituted at Antioch simultaneously with the plan of alternating work and study. Both have been in operation for the past twenty-five years. These courses focus on the world today, including how it got that way and where it seems to be going. They attempt primarily to motivate students to continue self-education rather than to plug all the gaps in their knowledge as of now. They are designed to introduce students to the major ways of approaching human knowledge, and to give them some systematic idea of what the human race has already found out about the world both quantitatively (mathematics and the physical sciences) and in terms of values (the social sciences, the arts, philosophy, and religion).

These then are the classrooms. The next question is: What are students expected to get from the off-campus experience? Here the aims are three:

(1) growth of personal maturity, initiative, and responsibility;

(2) vocational exploration and basic experience;

(3) critical observation of contemporary society and insight into people and the organizations they have created — political, economic, social, scientific.

Since all of these aims are concerned with the same individual students, they cannot be separated nor can one be said to be more important than another. Vocational success, for instance, usually depends as much on general personal qualities and breadth of vision and understanding as it does on a knowledge of technical minutiae. Critical observation, however astute, needs some kind of personal and vocational adjustment to make it fertile in society.

The first aim, personal growth, is probably a much larger part of education than is ordinarily recognized. Students do seem to become more understanding, more responsible, and, when the college itself is paying attention only to the classrooms, we find the college assuming that this right doing must be the product of right knowledge. It is as likely to be the product of a new environment, the stimulation of strange fellow-students, a varied faculty, and a new life. But the college environment, though educational, has its limits. It is populated by inexperienced young people all of an age (ordinarily, though veterans today change the picture) and a specialized type known as college professors. The work-study plan extends this environment through a possible range of all human types in different communities and in different parts of the country. As one student wrote: "One of the things about the work-study plan that most amazes me is the way you identify yourself, for a period of time, with a group of people professionally and economically. You get in the habit of thinking not in student-supported-by-parents terms, but in terms of the person you are everyday on the job."

Another student observed that "this job is the best study of human nature I have had yet. Not only have I gained insight as to how other people's minds work but also my own."

The second aim, vocational orientation, it seems to me can be perfectly compatible with general

education. Work periods, in fact, can promote general education simply by clearing the classroom decks of narrow specialized courses. These courses grew up in answer to insistent demand; the demands, I feel, were legitimate though their solution was not. When the only college-educated professions were law and the ministry, what we know today as a general curriculum was quite definitely "vocational." When young people began going to college who were aiming at other professions, the pressures for specialized curricula began. Young people cannot be expected simply to turn off their curiosity or anxiety about what they are going to do vocationally while they concentrate on general education for three or four years. How they are going to earn a living *is* a big question. Self-doubts about their competence as adult workers may loom large. The pressure to demonstrate the "practicability" of their education may be insistent.

Some colleges do ask their students to put all this aside while they acquire the common knowledge of civilized man; the result, often, is restlessness and resentment. If they get any general education from their courses, it is almost in spite of themselves. Other colleges answer the pressures with the barrage of specialized technical courses we deplore — not only because they rob curricular time needed for general education, but also because even as vocational preparation they defeat their purpose: narrowly and rigidly trained people are limited within their own professions, not to mention as general citizens.

A third answer to the pressures for vocational education is a work-study plan. Under such a plan, the young person who enters college to get an education primarily, he thinks, so that he "can be a better journalist" (and, because he has read the catalog, he piously adds without knowing quite what he means, "and to be a better citizen and lead a richer life") is not asked to forget about it until he has studied philosophy and art. Nor is he given twenty courses in feature writing, editorial writing, and the special ethics of the news story (when journalism, at that, may be only his first romantic untried whim). On a work-study plan, he studies art and philosophy in the classroom, and finds out on a regular job what newspaper work really feels like. There he solves some questions and garners new ones, learns that he can live responsibly as a self-supporting adult, and becomes acquainted with the specialized techniques of his craft more vividly and doubtless more realistically and rapidly than he could in the classroom.

So much for the vocational element in the work-study plan. As for general education, this young journalist out on his job is testing the relevance of his knowledge of philosophy, economics, government, and psychology quite as much as he is learning how to write a news story. He learns that news is slanted, that words are semantically loaded; he chases ambulances and runs squarely into questions of ethics. Even though we are educating in "how to live" rather than in "how to earn a living," we live during half our waking hours *as* something — engineer, social worker, or newspaper man, and it is in those hours usually that our largest contributions to society are made. How to live the good life within one's vocation creates some of the sharpest moral and ethical conflicts one can face. The directed experience of a work-study plan is one way a college can help a person face them.

In and out of working hours, the experience of living as an adult, contributing member of society can raise all the abstract problems of the human mind. This is not surprising, since these abstractions were formed originally out of the general experience of human existence. How alert the student is to the abstract problems implicit in his experience depends upon his curiosity, his breadth of mind, and the amount of knowledge he has to start with. We see one typist who has absorbed information about the whole business and the whole community while another typist recognizes only the stationery in front of her. This is sharply apparent in job reports from students who have held the same job consecutively. One will complain: "This job was entirely rou-

tine; I got everything out of it by the end of two weeks." Another will have explored and pondered the whole organization, the whole profession, and the whole city, and will claim that "this job is an essential introduction to any work with people." How much a person gets from his experiences seems closely related to his whole effectiveness in life; it is a trait to be specifically educated for, if that is possible. One might say that the whole effort of a work-study plan is focused on this one trait — that of being an observing and thinking animal.

Each Antioch student is asked to write some kind of a report every period off campus. These reports take special forms, but basically the student is asked to consider:

What is your job? How does it relate to the whole plan ("try to find out why it is set up as it is before you criticize")? What opportunities does it offer for initiative, observation, extension of knowledge and skills?

What is the organization's function in society, its size and the extent of its services, its employee policies, and its value as a cooperating employer in the work-study plan?

You on your job — what do you contribute to it, what does it contribute to you ("vocational, personal, informational, political, cultural, economic, philosophical")? How does it relate to your academic studies, past, present, or prospective?

What is the nature of the community to which your job takes you? What of its leisure-time activities, its customs, its people?

Some of the remarks in these reports may indicate their relation to general education:

"Interviewing here at the hospital clinic, things began to get very clear, to take on a new and urgent meaning. Sociology had always been a great deal of theory. Now I see it in terms of people."

"At the factory, I realize that however ill-educated and shackled by prejudice people are, they are people, and my job now is to learn to live and work with a world that is far from ideal."

"I have learned above everything else what a terribly slow process it is to educate people to think and act without prejudice, to make them realize what democracy really means, and to teach them even such fundamental things as hygiene and child care."

"I saw that as a mechanical engineer, I had better bear in mind that a machine not only turns out a product, but, depending on its design, makes the man who runs it hunchbacked or erect."

These observations, drawn from the off-campus experience, are enormously extended by the exchange of experiences among all Antioch students. A discussion in an economics class may involve an accounting student who kept the dollars-and-cents record of money lost by a company when its shop employees went on strike, an engineering student in the shop who went out as one of the strikers, a reporter who covered the strike or saw it covered from the vantage point of the newspaper city room, a student who was doing research and education as an employee of the union itself, another student who was a field intern supervising an election in the plant for the National Labor Relations Board. The same kind of many-sided exchange of experiences goes on outside of class; it permeates the campus environment as students pour back from exciting and varied experiences to the community of the campus.

Indeed, it seems to us that applying the work-study plan to all students in all departments of the college is one of the most important factors in using it for general education. Applied partially, the work experience would set some students apart from the rest, instead of providing a richly varied experience shared by all. The tendency in a partial use of the plan, also, would be to institute it in areas where jobs might be easily obtainable — business administration or engineering, for instance. The result would probably be a strong vocational slant instead of the emphasis on general education, and it would be

hard to get the student to see beyond the vocational goal. Incidentally, the work experience might be considered of comparatively *more* vocational value in those areas like English or economics or art, where the practical application of the subject falls into less well-defined social patterns.

The off-campus experiences to some extent are drawn upon directly in the classroom. The cultural physics course requires each student to write a report linking physics with his cooperative job experience — if on a newspaper, he might try his hand at Sunday features on atomic power, if a government bureau, he might analyze state control plans, if a department store, he might discuss the physics of electric irons. The required course in Life Sciences suggests such topics for papers as: "In general, why are some of your job associates liked and others disliked?" "Contrast the general atmosphere or morale in different organizations in which you have worked. What specific factors seem responsible for these differences?" "Explain the attitudes, feelings, emotions, and other psychological factors present in crowds like audiences at revival meetings or people in a picket line."

More often the off-campus experiences are drawn upon indirectly. The professor of the general course in ethics reported: "In classroom work, I sense a subtle difference between those who have had work experience and comparable students in another college, in that there is a greater wariness of the lofty, the abstract, the purely theoretical. For instance, in the ethics course taken by upperclassmen, one gets the definite suspicion on the part of the students toward those thinkers who erect a logically neat and speculative system of thought, which is 'pretty' but not real. This does not mean that they go necessarily for the more 'pragmatic' or 'utilitarian' schemes of thought — but that any philosophy which is ivory tower is immediately suspect."

This professor points out that in a sense he is drawing upon the off-campus experiences in his request for a term paper, not on the "Ethical Philosophy of So-and-So" but on "My Ethical Philosophy."

A social sciences professor found a similar "noticeable difference between students who have had work experience and students who have not. From the job they come back more mature in understanding; more self-confident; more realistic; not so easily carried away by theory or utopian ideas." The professor of the general literature course reports that "in the more mature students I suspect that a certain soundness of judgment and knowledge on timeless subjects, such as the lot of the common man (Burns, Gray, Goldsmith), comes as much from first-hand experience as from books."

The work-study plan makes a difference in the professors' teaching, too, for professors as well as students learn vicariously from all the experiences reported back to the campus. Their statements are pulled down whenever they waiver toward the ivory tower. Moreover, as counselors to the students, they must follow through the students' problems, experiences, and discoveries.

The process of integrating classroom and experience goes the other way too. Sometimes students take specific questions out to investigate during the off-campus period. The professor of the general course in "Foundations of Western Civilization" encourages students to go to different churches in the community where he is working and to talk with the clergy in order to study religious culture of our day in relation to that of ancient and medieval times. The professor of "The Arts and Man" encourages students to visit the art museums and to look up this or that special period or picture. Many other informal suggestions are made, or devised by the students, for explorations that may be made off-campus which will tie in with academic work.

In the last three years, however, Antioch College has been trying to devise much more specific correlations between the life off-campus and the regular curriculum. One of these projects was to have the student submit a written or graphic report twice during his college course which

would be an original investigation into the raw material of some aspect of the job community. To indicate the kind of thing that might be done, various members of the faculty drew up suggestions. Some of them are given here.

In the humanities:

The problem of ultimate authority for ethical action. To what authority, if any, does modern man appeal in making his ethical decisions? Religious, pragmatic, political, national, etc.? This might be a study of a cross-section of workers to discover in casual or careful interview what is the recognized or unrecognized principle of their moral choices.

Teaching literature to children in a school could lead to an interesting study of why people like certain things, how one comes to understand literature, what it has to contribute, and the like.

A survey based on firsthand experience of the kind and variety of cultural opportunities available in a certain city, their accessibility to the general public, and the causes of their development so far.

Changing standards in the ethics of marriage and sex. A firsthand study of the prevailing attitudes toward "right" and "wrong" conduct in the area of sexual behavior. Again, the "average" American would be the material of study.

A factory job might lead one to examine "proletarian literature" from *Shirley* to *FOB Detroit*. Or one could examine race literature, books by and about Negroes or Jews, and connect them, positively or negatively, with direct experience.

In the social sciences:

Find out all you can about business organizations such as Chambers of Commerce, Rotary, Lions Clubs, etc. What classes of people attend the meetings? Why do businessmen belong to such organizations? How, if at all, do the organizations influence the lives of the members? What programs of political action do such organizations seem to sponsor?

Study the political structure of the community. Become acquainted with local organization — precinct, ward, district. Visit various party headquarters. Relate political trends, if possible, to cultural and economic forces.

Study the physical basis of the community. What geographical factors determined the present location? What type of industries seem to congregate in this city? Is there any evidence of migration of new industries into the city and old industries out? If so, what factors account for it? How does the economic life of the people determine the cultural, social, and political life of the community?

Everything has a history: a town, a business organization, a social agency, an art gallery, etc. Each of them in some way reflects the culture of which they are a part, and offers a concrete approach to the study of contemporary society, plus the advantage of seeing it in its wholeness. A project like this would not be confined to digging into old records or consulting books, although for an historically minded student this should prove rewarding. Personal interviews with old residents or amateur historians can pay all kinds of dividends.

In the life sciences:

Medical superstitions and fads of the community. In a rural community, use of scientific methods by farmers or dairymen.

Investigation of health services in the community — clinics, hospital services, and the like.

The psychological factors involved in influencing people as observed on a selling or public relations job.

Describe, from firsthand experience, the modern institutional care of the feeble-minded, the insane, the delinquent or criminal.

In the physical sciences:

Study of raw materials and industries of an area.

Study of services in a large city dependent upon electric power.

Study of applications of chemurgy in an agricultural environment.

After three years of experimenting with such reports, we have discovered that most of these suggested projects would be far more time-consuming than a single student in the leisure time he has at his disposal could undertake with much depth or success. Perhaps some, too, are beyond their undergraduate powers. Some of the several dozen reports which have been done heretofore have proved interesting, however, and students generally have used considerable imagination in choosing their subjects.

One girl, for instance, on a job as a motion picture studio guide in Hollywood, chose to look beneath the glamor and study the history and present status of the union organizations and conflicts in that industry. She read what she could find; interviewed foremen and fellow workers, management and union leaders; drew up an account of her study. Out of it she got skills in gathering and interpreting raw data and tested her abilities as an investigator and reporter; she got a factual, realistic, and unbiased impression of labor relations itself; and, finally, she got a view of one phase of human relationships which has all kinds of social, political, economic, ethical, and philosophical implications.

A boy on a Cleveland newspaper and another in a Cleveland law office used their special vantage points to investigate the story behind Cleveland's downtown terminal — the fabulous story of the Van Sweringens and their effect on Cleveland's city planning. A girl from the South analyzed three job experiences in retrospect — work with immigrants, sharecroppers, and delinquent girls — and evolved a broad-based social ethics upon which to build her special interest in work in race relations.

Another student returned to his home town of Abilene, Kansas, for a job during an Antioch work period and studied the town itself, discovering new relationships between long-known facts and developing a new sensitivity to the intricate facets of community life. Another student analyzed the treatment six newspapers gave a specific set of news events. Although she was a decided partisan to the viewpoint of the newspaper on which she was then working, the study enabled her to see that all the papers, including her own, colored or selected or suppressed the news to fit their viewpoints — a conclusion which had interesting semantic, ethical, and political ramifications.

After making such studies, the students return to the campus and discuss them with members of the faculty who can help them evaluate further the experiences and the interpretations they have reported. Much of the value of these studies is the steady flow of materials they provide for the classrooms in literature, economics, biology, philosophy, and so forth.

Under J. Holly Hanford, Milton scholar and authority on American civilization, Antioch this year is beginning a more organized effort to integrate academic courses and off-campus experiences. The kinds of studies suggested for students off-campus may become the cumulative projects of several students in succession. A continuing file of regional materials may stimulate students to investigate their environment and add material to the file. Publication of the best reports might be an incentive. Extensive counseling with students in advance and evaluation with them of their results will be done.

Dr. Hanford is himself "very partial to the historical method, taking things as they are and asking how they got that way." He remarks, "The good field study as I conceive it is an accurate description and a full genetic explanation of something or somebody interesting and important."

"Taking things as they are and asking how they got that way" is a good description of Antioch's whole approach to general education and of its efforts to make a work-study plan contribute to it.

One last question may be asked. This is all good enough, but are the results worth the trouble? Are they worth the educational time spent on them? The answer, it seems to me, is that the dullest thing on earth as ordinarily taught is general education, except to the special kind of mind which likes nothing better than to be left alone with its books. (And these are not all necessarily the ablest and most intelligent minds, so we cannot escape by saying that college education should be limited to them.) If we cannot somehow get the temperature up on general education, we would save a lot of time by scrapping it. Anything which makes general education seem more relevant and purposeful to the students is worth it.

We do not believe in studying the cultural heritage solely for its aesthetic values or as a discipline in learning. We are drawing upon the past as a means of making life better in the present. We believe that directed present experience is a vital supplement to academic study. We do not believe in vocational education for some students and cultural education for others. Every student who is to make a contribution to society needs both.

Education for the Machine Age

BY M. H. HEDGES

1.

THE *London Spectator* opened its editorial pages to a large-scale ex-gambler. Edwin Leonard Packer brought a degree of thoughtfulness to his subject quite beyond the attainments usually associated with his profession. He classified gambling as a disease or neurosis. He suggested no cure, but he did say:

> Our industrial civilization has produced, in spite of progress and the emancipation promised by science, a sense of boredom and frustration in the common man. . . . A restriction on gambling in any form may merely serve to direct the emotional drive into other and perhaps less socially acceptable channels.

To me, the ex-gambler has posed for educators everywhere the insistent question of this age; namely, how can the frustrations incident to an industrial environment be directed to more socially acceptable channels?

Surely no one can contemplate the present-day scene with equanimity. The old mores, the old moral guideposts, the old techniques are crumbling. In a very real sense, the soul of man is locked in a struggle with the machine. When I say this, I do not visualize a struggle merely in factories, between workers and inanimate monster tools. The struggle is more pervasive than this. It moves on a larger scale. It requires imaginative force to detect it. Yet it is real, and fundamental. The struggle must be seen as an effort of the individual to gain an area of activity for himself where he can make uncontrolled decisions.

To operate an industrial society based upon machine production takes organization. The world is superorganized. Trade associations, unions, farm associations, civic organizations, veterans' organizations, political parties, blocs, nations, coalitions of nations, leagues — these characterize the modern scene. The individual was drawn to organization in order to preserve a vestige of freedom. He believed he would have more freedom if he accepted the discipline of organization, than he would if he tried to stand alone. But in an organization the controlling opinion may gravitate to a dead-level of mediocrity. The imaginative, creative man may by chance secure a position of power; more likely the crowd-man without imagination, or social sense, becomes the directive head. Even the antisocial, neurotic may seize the organization or the nation and bring millions of victims to disaster.

Americans cling to an ideal of liberal education. This is predicated upon the faith that contact with the accumulated wisdom of the ages will somehow fit the student when he passes to active participation in affairs, to make socially sound decisions. But he does not enter the kind of world visualized in the schools. That visualized world is conceived as fluid, free, hospitable — a frontier civilization. It is in reality rigid, mortised in institutionalism. If the liberally educated person is to make a contribution other than that proffered by chance, he must be realistically grounded in an understanding of the machine civilization of which he is a part. Liberal education in the machine age can mean only education which will fit the individual to adapt himself to

his milieu, equip him to protect his integrity of mind, and to conserve those values which make for freedom.

2.

The workerless factory has been a goal of technological development for nearly two decades. It appears now a technical possibility. A certitude or not, it symbolizes the gradual attrition against manpower by the machine in industry, and this condition certainly has implications, other than economic, for education. It suggests a quality of dispensability about human life that undermines mores and morals. "There is nothing so cheap as human life," is a cynical observation of common workmen. Machine control certainly militates, too, against respect for workmanly qualities. The minor arts have all but disappeared from the community — woodcarving, weaving, silversmithing, iron working, cabinetmaking — and the major arts are but derivatives of the larger processes of the machine (i.e. the movies). To claim attention the poet must increase not the intensity of his song, but the versatility of his meter, and his substantive subjects. The lyric cry has given way to the objective bark. The processes of the individual soul are left to psychiatry, and the poet becomes a chronicler of life in the byways, as does the novelist. The main problem of the community is now how to get man back in the center of the picture. Certainly two ways to do this are to create a new respect for individual dignity, and to enhance human skill. There are skills in mass production that are little regarded, which can be tracked down and given their proper place in the productive process. The present renewed interest in apprenticeship training may exemplify an attempt of the community to do this very thing.

The workerless factory exists to produce a plethora of standardized goods. This has been brilliantly accomplished in America, but this very feat has brought about a substitution of values, quite revolutionary. In the races' long search for happiness — futile perhaps and fruitless — the mere possession of gadgets, objects, or material possessions, has never been adjudged by the veriest tyro philosopher as productive of contentment, peace or happiness, and this is perhaps what Edwin Leonard Packer meant in his exegesis of the cause of the current malaise, boredom, and frustration. It is a question whether bathtub civilization is civilization at all. It is a question whether any war is worth its cost, even though vast raw materials are at stake, or oilfields richer than the dreams of Croesus. Modern man's ironic predicament is: he must die for the goods technology creates, and not for his ideals or for his dreams.

The workerless factory — as a symbol of modern technology — operates upon a kind of scientific metaphysics quite beyond the attainment of the individual worker or the layman. Blueprints by engineers, electronics, scientific management, have raised up a high-priesthood in industry, which in part accounts for the present struggle over control. Top management believes the rank-and-file worker — those who are left — has no business hoping to participate in management because the rank-and-file worker has no contribution to make to the metaphysical process of discovery, and invention, upon which production rests. The worker feels his essential individuality and humanity outraged at such an attitude.

What the worker — and the layman — is beginning to sense is the kind of world of interdependability which the machine is creating. This is the premier social contribution of the machine. The world has shrunk into the span of a region, or province, of a greater universe. Radio, radar, aeroplanes, television, telephones, swift ships — these are but tools by which men are forced into new neighborhoods. To be sure, mankind has not adjusted its sights to this shrinking process, but it is beginning to be aware of the propinquity of distant lands and races. The significance of Wendell L. Willkie's flight around the world was just this: a provincial citizen was dramatizing his own effort to bring his mind abreast of technological developments. One world, but divided interests and minds!

On the domestic side, the principle of inter-

dependability is plainly visible. To distribute the Niagaras of goods produced under mechanized production, mass consumption is necessary. This concept has revolutionized our economy. Mass consumption, as a necessity, has destroyed the old classical economics of hit-and-miss production, and it has demanded a degree of team-play quite beyond the economy of frontier days. The new economy is delicately balanced. It demands group cooperation on a vast scale. It erects prohibitions against irresponsible withdrawal of services of any kind, against irresponsible interruption of services, against placing the individual and the group above the interests of the whole. Under the compulsion of mass distribution the modern nation is now a social nation — to be sure, without the needed mores and ethics necessary to make it a social nation. To provide the mores and ethics is the business of the schools — the immediate, peremptory challenge to the schools.

While the machine, with its great power to create goods, revolutionizes the economy and dangles the prospect of material well-being before the eyes of millions, it also creates obstacles to creating a social world. The multiple means of communication between groups, on a mass scale, such as radio and television, usher in competition for the individual's attention — to sell goods first, and to purvey ideas. Propaganda supersedes education. The pressure of the radio and the press upon the individual is insistent, and quite beyond the force of the more subdued processes of education. In this sharp competition for the individual's attention, techniques are developed and used which move away from reason toward sensory shortcuts, and which undermine the very basic processes of education in a community sense. Not long ago a mother was walking through a store with her five-year-old son. She was surprised to see the boy snatch a package of gum from a counter. She rebuked him. He demurred. His explanation was that the "man on the radio told him every morning, when you pass a counter and see Orange Blossom gum, help yourself to a package." All the mother's careful training of the lad in honest ways *in the home* had been swept away by the man on the radio.

The struggle today is to get man back into the center of the picture. Not the machine but man must become dominant. And in man, not machine thinking, but creative thinking must become the ruling force. In no trite sense the issue in World War II was reason *vs.* colorful propaganda. Reason is the principal tool of education. In this generation there has been an organized assault on man's reason quite beyond that in any other historical period. That man has survived, that he has withstood the adroit, colored presentation of lies, fallacies, and conscious misrepresentation, in democratic countries, is a tribute to the kind of education democratic countries have had. Upon this foundation democratic countries must build, but in a more conscious sense, and in a more aggressive way; for the struggle is not ended, and the creation of a social world stands afar off on the horizon.

3.

If education is to be accepted then as a project in adaptation, adaptation of the student to an unseen environment (in this particular case, the world wrought by machine), it is apparent that certain comments can be made even now upon the kind of courses and methods which may be used. Quite arbitrarily I shall set these down.

Quite consciously we should build courses that contribute to the sense of dignity of the individual. To be sure, this has always been the case in so-called liberal arts colleges, but perhaps not consciously enough. Biography, literature, psychology, philosophy — these of course are germane to man's quest for individual fulfillment. But the individual is not the center of the world or the universe. Courses that merely contribute to the individual's egoism and do not tend to make him a social person are futile to meet the situation as I have described it. The individual must find his destiny in the group. It is the weakness of our present education system that we have not found ways to do this very thing.

"If we desire to hand on to the afterworld," declared Sidney Webb, "our direct influence and not merely the memory of our excellence, we must take even more care to improve the social organism of which we form a part, than to perfect our own individual developments. Or rather, the perfect and fitting development of each individual is not necessarily the utmost and highest cultivation of his own personality, but the filling, in the best possible way, of his humble function in the great social machine."

Obviously teachers who live in both worlds, the world of thought and the world of action, will make the greatest contribution to the kind of education which we are outlining. Scholars who have experience in business, in labor, in government, returning to colleges and universities will be able to help most to aid the individual youth to find his destiny in a social world. This is in no way intended as a reflection on scholarship or on the scholar. The scholar is indispensable to a university and to society, but the scholar should exist for the training of scholars and not merely for the training of those students who are attending for practical affairs. Every teacher tends to reproduce himself in his students. A faculty should be multiple in type and not singular. Scholars, practical men, creative artists, all these should make up the college faculty as those best equipped to graduate young men and women who are to transform and not merely to fit into the world.

If the machine world is based upon communication, all courses that tend to unite rather than separate peoples should get encouragement. Courses in comparative religion and comparative philosophy are basic. Courses in ethic cultures are essential. Anthropology should not be an esoteric field for ambitious young scientists, but should widen out into popular courses for everybody. Racial cultures and nationalistic cultures should be viewed with the dispassionate eye of the sympathetic student as if they had as much primal right upon this little planet as the students on culture. Every culture should have its day in court and the end of such study should be to bring antagonistic races of nations to a better understanding rather than to widen the gap by the erection of myths about racial superiority. Courses of any kind which give philosophic overall views are valuable.

Another conscious end in the mind of the modern educator could well be to produce the administrative type. America has been successful in producing good executives but the executive personality is not necessarily the administrative personality. An administrative personality must have by natural gifts strong sympathies with all kinds of temperaments. He must have the gift of reconciling clashing personalities. The administrator must be one who can be hospitable to many conflicting points of view and conflicting ideas and be able to reconcile enough of them to a workable program as to command allegiance of the group which he is working with. The administrative type is rare in modern life and must become a common type if a democracy is to really succeed. In one sense, the administrator could be conceived of as the goal of modern education. He values the integrity of the individual beyond all other assets. He it is who makes democracy a reality in a hundred changing situations and without him democracy will fail. An executive gives orders of such kind and in such manner as to secure compliance from his staff. The administrator works out with that staff the program in advance to which they are all to devote their energies and loyalties. The method is quite different, and the results must be different in consequence.

The world of machines is really the creation of science. Scientific methods and scientific standards made that world and it must be transformed by the same tokens. In a very real sense science, and the methods of science, must be an underlying part of any system of education. The generations following the Civil War in the United States were split by a long debate as to the antipathies between religion and science. That conflict has been almost closed today by scientists

themselves. Scientists themselves are laying the basis for a new kind of faith in a spiritual world and in a spiritual destiny. Such books as Schroeder's *What Is Life?* and De Nouy's *Human Destiny* are intellectual landmarks in humanity's march to new goals. The purpose of such education is not to make little scientists, but to equip the student with a scientific method that aids him in solving his individual problems but more to make a contribution to the world in which he finds himself. The world is played over by propaganda. There should be a new emphasis laid on the ability of the individual to distinguish between truth and error. Everything that can be done to utilize reason as a tool should be a task of the educator. But the emphasis here should be upon reason as a tool, not as an end in itself. Degenerate dialectics must go. Research should be regarded as a profession, not a specialty, or the sole end of education. In the capital of the nation there are 500 research agencies, and it has been frequently remarked in Washington that their findings were scarcely ever used. They have little effect on the course of the ship of state.

The weakest spot in the modern educational process lies in the field of education of emotions. Here of course is where the machine-produced agents of the machine world have their way with the individual more than the school. Movies, a Niagara of books, the gregarious community produced by automobiles, are more potent than the weak resistance put up by the accepted agencies of education. In time no doubt a new psychology which hinges upon the pathology of human personality will have a strong effect upon teaching. To put it negatively, how not to produce the paranoiac and the acquisitive monster is the end of modern education. This too at once touches the world of moral values intimately. Too frequently morals in the United States refer only to sex relations. But sex relations are only one kind of human relations and we must find a way to educate in this larger field. Moral values must come out of a vision of life based on loyalty to the human family. Hate must be turned into good will.

Education must somehow widen out into a racial function. It must not equip little men for the mere tasks of getting on in a machine-made world where acquisition and power are the dominant motives. Education must identify itself with the foreseen ends of racial development. It must rest upon a sense of continuity of human life, not of the individual.

4.

Despite naïve faith in education, in America and in other democratic countries, despite faith in education as the cure for individual deficiencies, and for all social evils, education is an art, half-discerned and ineptly applied, to what purpose is not, at the time of application, wholly clear. Education rests on faith and hope. It is not an exact science. Education itself as a formula suffers from division, or broad differences of opinion, and scattered determinations. Too often education, even in democratic countries, suffers from a kind of half-baked official direction. It reflects the present disorder, not future order.

Education is usually a generation behind the accomplished fact. In somnolent eras where progressive change was slow, this lag did not much matter. But in the age of technology, when the world is transformed by invention and discovery before the students' very eyes, the lag is dangerous. A student is being educated for an environment which may have crumbled before he has a chance to enter it.

To be sure, the faith of educators rests upon the hope that the student can be equipped with intellectual tools which will enable him to live in any environment, and to make right decisions. This has not been the case, in actual accomplishment, however, as I have tried to show.

At any rate, the student must be educated to live in a society where change is the habit and the law. "The goal of progress is a flying goal." The student must acquire intellectual stamina, but more, he must realize his imaginative talent. The test of science is the ability to predict.

Whether we are skeptical or not about the educative process, all surely realize that it is the only tool mankind has for solving the problems the race confronts. It alone offers hope. Can it offer hope today? Just now mankind may have not a generation, but a period of only a few years, to choose new directions and to drive toward new goals. It is as if the hard-boiled choice of the hard-boiled gangster is being offered every man — "either, or else."

Religion in Liberal Education

BY ERNEST J. CHAVE

IN THE average college or university, students and faculty might be classified under the following categories relative to their religious beliefs, attitudes, and habits:

1. Conformists to traditional sectarian patterns.
2. Casual and indifferent.
3. Skeptical, cynical, or hostile.
4. Intellectually liberal, interested in history and psychology of religion.
5. Religiously sensitive, appreciative of spiritual values generally.
6. Committed to religious causes, concerned with putting ideals into action.

The categories are not exclusive but they may serve to direct attention to types of religious behavior or disposition which need to be kept in mind as one considers the kind of religious program which may function adequately on a campus. One cannot assume that a list of courses inviting free inquiry and creative thought will appeal to any large proportion of the students, even if suitable faculty could be secured. Only a small percentage of men or women seem to enjoy radical thinking in any field, and perhaps a smaller number are ready to trust their own judgments. Most people are satisfied to drift along, merely rationalizing mores to which they have become accustomed. A few are negative, for different reasons, and show their emotional disturbances by hostile criticisms, mockery, or some irrational conduct. There are always some who are not content without action and these are the crusaders for social causes, organizers and joiners, with various degrees of discriminatory understanding of what they do or should do. Some are mystical, contemplative, spiritually sensitive, refined in mind and emotional responses, but with widely differing appreciative consciousness and manner of response. Even conformists vary in their conformity. Probably there is no normative way of being religious.

What then shall we do with religion in a liberal educational situation? Shall we provide a rich, stimulating educational opportunity in varied course offerings, well-planned chapel services, and a good range of informal activities and organizations, and then administratively at least adopt a laissez-faire attitude? Is there any need for appraising what goes on, or of trying to integrate religious factors into the total educational program? Is religion to be treated as an intangible variant beyond control or direction, only inviting trouble when subjected to rational educational procedures? In a recent symposium on religion in higher education[1] one definite tendency is to avoid any treatment of religion which may arouse controversy. Analytical and descriptive studies are accepted as being in order but one should be cautious in evaluation, and be careful not to arouse any emotional interest or attitudes. In fact one professor boasts that he can deal with religious topics so dispassionately that his pupils will not know whether he is a Catholic or Protestant. Perhaps education has no responsibility for helping young people to shape a life philosophy, to feel

[1] Symposium edited by E. W. Blakeman, University of Michigan, in *Religious Education*, March-April 1947.

differences in life investments, and to prepare themselves for effective functioning in a modern world. Perhaps graduates should be sophisticated neutrals without convictions, purposes, or sense of personal-social obligations.

Though there is considerable skepticism and cynicism in academic circles regarding education for realization of spiritual values, the writer feels that there is a growing intelligent and appreciative attitude toward possibilities in this field of human development. Many books and articles, conferences and discussions, in general education are giving attention to spiritual factors,[2] to evaluation of ends and means with respect for personal-social enrichment and growth, to the integration of life around basic meanings and goals. Traditional religious programs are being re-examined; old assumptions are being questioned; sectarian forms are being transcended; and a pervasive, transforming spirit of religion is in the ascendant. Investigation, exploration, and experimentation are the order of the day. Religion is coming to be thought of as an important, integral part of culture, and a vital element in education.

Before we consider proposals for a constructive program of religion in higher education let us briefly review some of the conditions in religion which confront educators who dream of a new day. These conditions are discouraging but perhaps no more so than many of the socio-economic conditions which education is slowly changing. The religious picture is not what it should be but it is not by any means a hopeless situation. While shortcomings may be lamented there are clearer visions of what spiritual attainments may be, and how they may be realized, than any "revelation" ever set forth. Insights are deepening, values are expanding, and natural forces and resources promise more than supernatural powers were ever asked to perform.

Perhaps we should not play on words too much, for it is impossible to know what verbal symbols may include in their varied meanings. To many educated people the word *natural* is far more comprehensive than the term *supernatural*, for the former implies an infinite universe, with intricate processes operating in time and space, so extensive that science and mathematics can only suggest possible boundaries. The old supernatural realm and activity seems but a childish fantasy alongside the wonders and mysteries of the unfolding natural world. The religionist often seems to speak as if he alone lived with a cosmic consciousness, but can any educated man or woman do less? If a religionist speaks of God, does he go beyond the processes which the scientist explores? Is his symbol referring to a Power, a Cause, an integrating Value in the universe, for the reality of which the scientist can find no evidence? Has this religionist an intuitive sense that escapes the psychologist, the philosopher, the educationalist? The history and psychology of religion have done much to help us understand the different beliefs and practices, and to see the relation of what is called religion to human experiences subsumed under secular names. The fact to be kept in mind is that whatever one thinks, feels, values, or does in one situation is affected by what has happened in other adjustments. There is an organic and psychic unity to all experience. Further, what a naïve, primitive mind conceives is due to the limitations of sensitivity and meaning which that individual has, and what he describes may be relative to the same general situation that a critical educated person discusses in much different terms. The supernaturalist and the naturalist live in the same world, but they see and feel it differently and picture it to themselves in quite contrasting forms. One person thinks in terms of direct action of an anthropomorphic deity and another in relation to complex processes of consistent and continuous operations. A philosopher and a theologian may speak and think in abstract language, but most of the common people use concrete imagery, and specific impressions, with few generalized concepts born of critical thought. In all that is said and done under the name of religion we must inter-

[2] See publications of the Educational Policies Commission, the John Dewey Society, the American Council on Education, and other individuals and organizations.

pret it in relation to the thought and value structure of the individual or group involved.

Some of the conditions referred to above which confront an educator include the following types of problems. In the "One World" which the United Nations organizations are trying to unify we find that religion seems to present an extremely bad set of relationships. The people of the world are organized under many diverse religious organizations, with beliefs and customs in continual conflict. The Christian groups have little harmony among themselves, and yet they assume a superiority to the older ethnic faiths. Only a few attempts have been made to get leaders of different religious bodies to confer together, and few writings have sought to bring common understanding or cooperation on any issues. Yet in the United Nations discussions, spiritual interests are as much considered as material. In fact they seem to be supreme at times in the recognition that unless justice prevails, and a higher basis in international relations is achieved, devastating wars will inevitably follow. Scientists, radio commentators, statesmen, editors, speakers and writers of many varied backgrounds are all making contributions to a world fellowship, and stressing spiritual values, without any sense of dependence upon statements of organized religion. Again in America, with its two hundred and fifty sectarian divisions, we find causes and well-developed movements which represent spiritual outreaches for better living conditions and nobler personal-social standards, that seem to have little if any relation to any sectarian origin. Religion is a pervasive quality of all life and should not be limited to ecclesiastical customs and stereotyped credal statements. Theological speculations multiply even in a scientific age, and fine-spun theories are taught as absolute doctrines. Through methods of indoctrination, children develop concepts and attitudes that as adults they find difficulty in treating objectively. Fundamentalists, conservatives, and liberals emotionally defend ideas and formulae for which they frequently have little rational support. Concepts which ought to evoke cooperative thinking and large tolerance for differences of opinion often are the occasion for bitter antipathies. Preachers and teachers reach far back into a dim past to find illustrations of what are called divine manifestations, Christian virtues, and exemplary conduct. Seldom do they use the living present, or the story of history, as a basis for a vital faith and incentive to religious living. The Jesus of history and the Christ of theology are hopelessly confused so that no clear figure is appreciated and no right understanding of life and teaching is possible. In some circles authority for belief and conduct rests in an infallible Pope; in others a church assumes the role of interpreter and lawmaker; again the Bible becomes the source of norms, meanings being read into or out of its pages to sanction custom and creed; and still others look to science, pragmatism, or experience as their basic support. When one hears a demand for more religion in education one asks "What kind of religion?" What objectives should we have in giving religion a more central place in education? Is there a hope that a study of religion, or sharing in religious activities may make young people religious? If so what do we mean by "religious?"

In a recent book the writer has described ten basic types of religious experience, taking a functional view of religion.[3] The purpose is to separate the developing characteristics of refined religion from the multitude of confusing forms in which it is found. The categories chosen to identify these functional factors are stated in a way that makes it possible to recognize degrees of attainment in growing persons, to appreciate variations of achievement in different relationships, and to make plain the conditioning influences on their fulfillment. They have been used as a convenient diagnostic means of evaluating the religious life of an institution. The ten categories are briefly stated, and then illustrations are given of what they mean, or might mean in a college or university situation. It is hoped that this short analyti-

[3] *A Functional Approach to Religious Education*, University of Chicago Press, 1947.

cal statement may suggest the larger import of this view of religion. The order of presentation of the ten areas of experience is not important, and there is no claim to comprehensiveness or finality in the analysis. The headings are convenient classifications of types of what are commonly recognized as functional expressions of religion. They have been validated in many groups of conservatives and liberals, Protestants, Catholics, and Jews, and are accepted as identifiable characteristics of religion. The list is as follows: sense of worth, social sensitivity, appreciation of the universe, discrimination of values, responsibility and accountability, cooperative fellowship, quest for truth and realization of values, integration of experience into a working philosophy, sense of historical continuity, and group celebration.

By *sense of worth* we mean growing appreciation of the spiritual possibilities of human life with desire to realize fullness of personal-social capacities. It involves self-respect, worthy ambitions, and purposeful living. It is the exercise of intelligence, refined emotions, controlled powers, a widening of the gap between human achievements and the blind level of animal or mechanistic behavior. On the college campus we find many forces stimulating the growth of this spiritual quality but there are always depressing and degrading influences which have to be met and conquered. To the degree that institutions of higher education consider individuals and respect personality, religious values are dominant; but to the degree that persons are lost sight of in crowded classes, examination tests, content-centered curricula, inadequate housing, exclusive cliques, and other inhuman practices, there is a hard struggle to attain and maintain sense of worth. Faculty members who have time and interest for people, wise and sympathetic counselors, friendly folks in administrative and routine affairs, all have an affect on the growth of this quality. Some students are badly handicapped when they come to college, and are apologetic for trying to get a place in the sun. Others come with a confident sense of worth and can meet difficulties successfully. Some are awakened to possibilities they never knew in themselves; some are humbled and get a true sense of worth without being debased; some seem frustrated at every turn, never experiencing the thrill of making good. While everyone must find and prove his own worth, both physical and social environment make a difference. There is need for many concrete stimuli to worthful living — social recognition for conduct that is above the average, expectation of refinement, challenge to worthy citizenship, high standards for academic work, respect by those who are respected. The meaning of spiritual worth must be made explicit and attractive in the classroom as well as in the chapel, by an athletic coach as well as by a professional counselor, in the atmosphere of the campus as well as in its published statements.

Social sensitivity is a twin and inseparable quality, for he who has a true sense of his own worth, and his need for self-realization, will never purposely handicap another. To love one's neighbor as oneself is a very old religious principle. To help another person to find himself, to release and stimulate growth in another personality, to appreciate latent human goodness and to bring it into flower, are experiences which work for twofold growth. Sometimes competition, arbitrary demands, social exclusion, inferiority feelings, or other factors make it difficult to be socially sensitive and to live by the Golden Rule. To the degree that a democratic spirit prevails on a campus in administration, in the classroom, in dormitory life, in athletics, in opportunities for free discussions, and in general respect for worth when it is shown, social sensitivity will grow; for the soil is good and the climate is right. Exhortation to be considerate of others, to be kind and loving toward all, does not accomplish much; but in the give and take of campus life where social relationships are considered as of equal importance with studies, the spirit of mutuality and good will is likely to develop favorably. Students who feel the pressure of studies so great that they have to live in a library and always be getting ready for an examination, may miss the essential training in social

adjustment. Snack bars, dances, debates, campus organizations, all kinds of social situations provide opportunities for conversation, development of mutual interests, and appreciation of others. But it must be remembered in this quality, as well as in the other nine, attitudes and actions are always affected by precollege experiences and by continuing influences of homes and friends. Whatever is done by students to each other, by faculty to students in courteous personal relations, by counselors or occasional speakers in efforts to raise standards of social behavior, growth is a slow and uneven process. Personalities big enough to think of themselves and others at the same time are the products of many stretching exercises and gradual maturation.

Appreciation of the universe means living with cosmic perspective, thinking in universal terms, understanding and profiting by the laws and resources of life's dependable processes. One may use the symbol God, or divine, to recall the creative, integrating, stabilizing forces of the world in which he lives, moves, and has his being, or he may use scientific terms. But the religious attitude is expressed in the way one organizes his life in relation to these stimulating and sustaining forces, not by the way one speaks of the deity. It is much easier to become fluent in use of theological language, and conventional religious language, than to deal realistically with the laws and conditions governing human growth. Students need to feel that science, history, literature, art, and all fields of learning, may contribute toward one's appreciation of the universe, and to one's ability to take a significant place in it. Science may rule out prescientific supernatural views of religion, but it should make intelligent people conscious of the powers and resources inherent in the nature of the universe on which they are dependent. History in its varied branches should indicate the lines of most profitable procedure, and reveal some of the secrets of progress. Modern philosophy in the light of the testing and retesting of general principles should give a strong working basis for good living. Instead of religion's being thought of as the fluent dicta of any preacher or teacher, using stereotyped formulae, surely on a college campus there should be larger respect for integrative principles based upon the critical studies of all fields of knowledge. Here, too, one might possibly find appreciation for processes that yet are not reducible to mathematical equations, and perchance for the marvels which have order that a mathematician can describe. There is beauty, wonder, poetry, music, human feeling, that neither words nor art forms can more than suggest. Some courses and extracurricular programs might give opportunities for deepening and refining emotional experiences, for creative expression, for enrichment of life with more than facts. Whatever is done in conventional services of churches or college chapel, or in informal religious groups, to give meaning to man's place in the unfolding scheme of the universe, there should be an underlying recognition among students and faculty that the basic purpose of higher education is to gain such knowledge of the processes of the world in which we live that we can live fully and satisfyingly. Every graduate should have a broad horizon, a worthy set of objectives, and a faith that there are adequate resources for the upward climb. His life should reflect a sense of great dimensions in a vast but orderly universe.

Discrimination in values and readiness to sacrifice lesser things for greater, are the marks of a maturing personality. By college age one should have felt the plural possibilities of life, and the necessity for the constant exercise of intelligent choice. No one needs to be a mere victim of environment or habit. It is easy to make excuses for a low level of conduct, but there is no reason for looking to some supernatural conversion, or second birth, to give one a new lease on life and a higher attainment. There are always alternative ways of behaving, and if one is to achieve a worthy personality he must choose, discipline himself, and make good without making excuses. Psychology and sociology reveal the secrets of personal and social spiritual progress as well in studies of current life as in the studies of the scriptures. It

is not in knowing what Moses or Jesus said or did that is vital to religious living, but learning to weigh up values, to act in the light of careful judgments, and to build up adequate resources for worthy conduct. In college, students should have freedom to make choices, with more expectation than restriction influencing their behavior. They should learn to organize their time, conserve their energies, and distribute their interests, so that they have a maximum of satisfaction out of their varied activities. In every hour of each day choices are made and spiritual growth is tested — in a careless or disciplined attitude toward studies, in use of vulgar or refined language, in respectful or unworthy relations with the opposite sex, in selection of trashy or stimulating reading, in selfish indulgences or altruistic service. One may give lip service to discrimination, refinement, sacrifice, and idealism, or one may steadily push uphill and get satisfaction out of making the grade.

Responsibility and accountability are closely related to the foregoing quality, for they involve the use of freedom. Religion emphasizes the fact that no one can be a law unto himself, that if he is to enjoy freedom he must recognize his obligations to his fellow man and to the larger order of developing life to which he belongs. Man belongs to an interdependent society of persons, and to a universe in which the organic whole is bound together by mutually related parts. One must learn to be trustworthy, and dependable in carrying out all social duties, but responsibility as a spiritual attitude means far more. One must feel his responsibility toward others, in his example and in his influence. The New Testament indictment of a person "who causeth another to stumble" is an emphatic statement of this principle. An educated man or woman should be able to assume leadership, to initiate needed changes, to set standards of conduct. The obligation of privilege applies again both to individuals and to groups and nations. The ability of the United Nations to function depends upon the willingness of the people of the United States, as well as people of other countries, to accept responsibilities according to resources. College young people need to grapple with the spiritual problems of living at peace with other nations, and also of promoting the democratic way of life as the way of largest freedom for growth of persons. Perhaps a class in political science might awaken a spiritual sense on a broader scale than many sermons. Society waits for educated men and women who will accept the responsibilities of good citizenship. In a survey of one large university recently, less than one quarter of the graduates belonged to organizations working for civic betterment, or to those working for any significant social cause. How could a university stimulate and guide this spirit of social responsibility?

The next five norms of campus religious life must be dealt with more briefly, but any reader may expand the meanings for himself. Our functional analysis might be extended to any degree in a review of typical situations and relationships.

Cooperative fellowship is a conception of religion in relation to group life. It is concerned with the development of homes, schools, churches, businesses, government, and the many other agencies which operate in modern society. No individual can realize the fullness of spiritual life unless the groups to which he belongs are such that respect for personality is the major interest. Christianity has pictured an ideal community and social order as the kingdom of God. For any group to function at its maximum every member must identify himself with the group and seek interests of common concern. Some students are parasites wherever they go. They take what they can and with little gratitude, and they give as little as they are compelled to do. They may have begun the habit at home and they expect others to provide for them without mutual return. Some are able to fellowship with certain people, but not with others. These are hardly big enough persons to have a rich sense of fellowship with people who are different in race, class, nationality, talent, or other characteristic, but whose personalities are most interesting when given release in a significant project. People frequently find

themselves and discover latent capacities in others, developing true spiritual fellowship, when they tackle difficult tasks together for some urgent human need. Conventional religious groups should have a fellowship of like-minded people, but sometimes a higher spiritual tone may be reached in a group not labeled religious than in one of orthodox pattern.

Quest for truth and realization of values is set over against the common presentation of Christian truths, or those of any other faith, as dogmas, authoritarian creeds, the revealed word of God, or some such absolute. The educated man or woman refuses to accept uncritical traditions, dislikes attempts to solve problems by resort to authority, and expects to get his understanding of religion as of every other phase of life by experience and growing insight. He doesn't look for supernatural change but studies the laws of the world he lives in and tries to work creatively in a process that respects his worth. Religion for him is a growing insight into the problems and perplexities of life, and an increasing ability to attain desired ends.

Integration of experiences into a working philosophy of life is a frank recognition that life presents conflicting and confusing experiences of good and evil which challenge the deepest thought of mature minds. Suffering, death, tragedies, disillusionments, responsibilities, crises, fears, troubles of all kinds stimulate reflection. What does life offer? What are the basic principles undergirding satisfying living? Shall we meet our problems, frustrations, and limitations stoically, with resignation and hopelessness, or is there evidence of something more meaningful and hopeful? The religions of the world, and of the centuries, tell us of conclusions people have reached in the past. Today we review these old working philosophies and add growing insights from any source we can, and formulate new theories for ourselves. The college student is trained to face all the facts when he formulates a theory in the physical or social sciences, and he should do the same in respect to religious theories. He cannot take the old sentimental song and echo its refrain, "God's in his heaven. All's right with the world." He knows that all is not right with the world, and he has very vague ideas of both God and heaven. One must develop a working set of norms and principles, experiment, and repeatedly revise them as experience and shared insights warrant.

Sense of historical continuity is the assurance that we belong to an ancient and honored body of seekers after truth and righteousness. We re-evaluate the ideas and values of those who have gone before us, but we could not possibly do as well as we do today in our increasingly complex society if we did not have the wisdom of the past to guide us. Sometimes religious people think of the Bible as the sole treasure from the past with spiritual wisdom, and it is exalted as the one unique revelation of the one God and Father of all mankind. Educated people question that claim today, believing it to be an inadequate view of God, man, and the way of life. The many varied ideas of God in all faiths, in the past and today, and the many different interpretations of a divine way, are but indications of man's continued quest for the ultimates. The Bible is a valuable heritage, but continuity with the questers of the centuries gives us a much larger resource than the older generations had. We have the records of history, scientific research, literature, art, philosophy, and organized religion, all of which give us data valuable for understanding the nature of the world and of man. Especially we should be thankful for the stories that have been preserved for us of the few men in each generation who have risen above the average in nobility of life and clarity of vision.

Group celebrations are manifestations of the overflowing spirit. Religion is a social experience as well as a personal one. It grows by exchange of ideas, by contagion of spirit, by participation in group mores, by association with familiar symbols and customs. People have always had times, places, and ceremonies to focus attention on primary goals and values, to stimulate group-mindedness, and to renew consecration to causes. There is need for meditation, for getting perspective,

for redefining purposes, for recalling resources. In college, Sundays are frequently times for loafing or catching up work, and church holy days are mostly holidays. Stereotyped services to commemorate these events do not appeal to most educated people, and neither time nor ingenuity are used to make them meaningful. Worship practices, including communion or mass, are commonly gestures rather than times of reflection and dedication. On high days in the educational calendar such as athletic events, homecoming of alumni, Founder's Day, Commencement or Convocation, there are occasions for exalting the central human values and worthy achievements; but often the celebrations are superficial and boring. There is need for better use of drama, pageantry, music, conferences, exhibits, and other means of arousing interest and concern for something significant. This kind of celebration requires thought and planning, and probably more value comes from the preparation to those who participate, than in the final event to those who merely are spectators.

But we cannot expand this further. It is the cumulative experiences of the total college or university life that count in spiritual development. One person finds help in one situation and another in a quite different one. Most gains or losses are unconscious at the time, but count up in the course of the years spent on a campus. It is impossible, and undesirable, to steer the lives of students into fixed procedures. Growth conditions should be studied and as favorable conditions developed as resources will permit. But each individual must work out his own program, master his own difficulties, and discover for himself the superior ways of living.

There is a definite place for courses in the history, psychology, philosophy, and literature of religion, if they are given by scholarly persons who have an interest in religious living. Mere knowledge of the shortcomings of the past will not do much good, but appreciation of the struggles of mankind through the centuries to get basic meanings and to find a satisfying way of life, is stimulating to continued endeavor. Educated persons should know how to evaluate and improve existing conditions. Every instructor should feel a freedom to deal with religious factors in the courses he teaches — not a sentimental harangue, but a due concern for spiritual values in the common adjustments of life. Faculty conferences should develop wholesome attitudes and intelligent procedures in these incidental approaches to religion. Students should expect to deal as thoroughly with conditions which affect the human spirit as with those which are mechanistically described. There is scope for a wide variety of informal activities, but no organization once started should be allowed to develop vested interests and perpetuate itself when its continuation is a waste of effort. Frequent appraisal of activities and programs should be made by student-faculty committees, and suggestions made for their enrichment and cultural development. Norms such as the ten given in this paper may be found useful to diagnose and evaluate what is being done. Interaction with leaders in other institutions may be fruitful if there is keen critical and constructive analysis in such meetings, rather than searching for a bag of tricks to liven up a dead program. In general let the terms *religious*, and *spiritual*, be given respectable content, meaningful and challenging to students and faculty alike; and wherever the terms are used, let them represent up-grade living.

Suggestions for a General Course in the Humanities

BY ARNOLD DIDIER GRAEFFE

I. SYNTHESIS AND THE LIMITS OF CURRICULUM ORGANIZATION — A GENERAL COURSE IN THE HUMANITIES

EDUCATORS have realized for many years that the student's mind, subjected to different and independent fields of learning between which an internal relationship is not apparent, is in danger of being cut up between the departments of knowledge instead of developing organically and as a whole. The fragments of acquired knowledge must be glued together by something better than a weekly schedule.

The lack of an obvious relation between different subjects of learning is not in itself and always an educational disadvantage. Up to the age of fifteen or sixteen years our need of *synthesis* is very small. Partly this is due to the more "natural" working of the youthful mind whose acts of apprehension, at that age, are a process of long-term growth rather than of systematic absorption; partly to the ease with which the child adapts itself to new situations without questioning their future usefulness and validity. The adolescent and adult mind, on the contrary, will not work willingly and at full capacity unless it knows what it is doing and to what end and purpose.

Spread and breadth of information as promised by the course titles of a typical undergraduate college schedule is no guarantee for a real breadth and a real unity of learning acquired in those courses. Many attempts have been made and are being made to fulfill the exigencies of a "round" education by means of the curriculum. Seen from outside, all these plans are perfectly logical and appear to fulfill their purpose which is to avoid undue specialization and one-sidedness of training on the undergraduate level. But it is not sufficient to look at the labels of the packages with which we present our students. We ought to open the packages and see what is inside. However, considerations of professional ethics and our system of specialized teachers' training create in us a hesitation to involve ourselves in any act of trespassing upon the domain of our colleagues.

If the lack of synthesis, and the awareness of such lack, were not so fundamental and general an experience of the adolescent of today, we could look upon it with the detachment of mere observers. As it is, we cannot table the problem. The student, under the impact of what he feels is the practical reality of life, and with the muddled general aspect of the world in view, is impatient with the claims a liberal arts program makes upon his time and his good will. There being no background of general information, on the part of the student, to back up these claims — for he has not acquired more than the rudiments of such a background before he starts planning his life in a realistic fashion — he inevitably becomes skeptical of all education that goes beyond vocational training.

Liberal arts education persists, at this moment, largely on the wings of a tradition that does not question itself as yet. Inertia is a dubious capital to draw on; it carries no interest and its expendi-

ture leaves a vacuum that is hard to fill. A general education must be convincing by its own merits. It can be convincing only if it provides the synthesis the lack of which is today one of the student's major complaints. Synthesis is not the automatic result of a clever organization of the curriculum. Other methods must be tried out. One of them is a general course in the humanities.

But such a course will be efficacious only if its planning is done with the goal of synthesis in view — not only in a vague manner and as if synthesis pertained chiefly to the catalogue description of the course, but with regard to every one of its details. An itemized plan of this kind can be set up only by those who will teach the course. It depends on the size of the class and of the college, on the character of student body and faculty, and on the framework of educational policies into which it will have to fit. The plan described in this paper is one among many possible. It is based on the writer's experience in three colleges and is therefore a composite picture. Following are its guiding ideas, some of which might be considered in setting up similar courses elsewhere: the classics in letters, music, and art form the material of the course; there should be direct contact of the student with his material; the material should be selected and put in sequence according to principles which are discussed; the course should be taught cooperatively, using modified seminar methods.

In this paper the term "classic" is meant to include the significant, original, representative, messages of man; regardless of their medium, i.e., including the aesthetic messages of great music, architecture, painting, etc., as well as the great books; and regardless of their content, as long as it is significant *and concerns man as a whole.* Such a definition which would include Newton's *Principia Mathematica* as well as Bach's contemporaneous *Well-tempered Clavier,* implies itself a certain attitude toward teaching and synthesis, of which this writer is quite aware. But he believes that there is evidence for the suitability of the definition as well as of the body of objectified civilization encompassed in it, for the purpose of teaching toward synthesis.

II. DIRECT CONTACT WITH THE MATERIAL

The great original and significant messages in the history of civilization to which the term "classics" is applied in this paper were not intended for specialists but for the public. Plato addressed professional philosophers no more than Adam Smith professional economists; in a sense, philosophy and economics came into being as fields of professional activity only by way of aftereffect subsequent to the appearance of Plato and Smith. The original message is usually a direct message, and the public's cognizance of it is meant to be direct, without go-betweens. This direct contact of the public with the classics has largely been lost in our time. For this we are inclined to hold either the classics themselves responsible, or certain extraneous circumstances like the introduction of democratic principles in modern education or the economic insecurity of present-day mankind. But it is to a large extent ourselves, teachers and students, who ought to take the blame: in order to make our job easier, we have interposed the textbook and other forms of digest between ourselves and the original message. However, instead of facilitating the contact by dividing it into steps, the textbook has succeeded in removing the classics almost hopelessly beyond our reach.

Textbooks are written under premises which may, in certain cases, result in a vicious circle: first, the student should not be made to read what he cannot understand; second, the range of his understanding is ascertained by a statistical inquiry into his *ordinary* thought processes, including his working vocabulary and the measurable aspects of his intelligence. When textbooks are prepared according to these rules, we expect a minimum of intellectual waste and a general acceleration and improvement of the learning process — the acceleration and increased efficacy being themselves measured by the same statistical

methods with which we started out. There is no doubt that much of our educational thinking proceeds along these lines and that in many instances this plan has produced admirable results. But it has also caused the gradual severance of the college-trained public from the great tradition of Occidental civilization. If the plan had been in effect throughout the course of history, that civilization would hardly have manifested itself in the great systems of thought and expressions of humanity by virtue of which it carries its name of *civilization*. Due to the fine-grain diet of textbooks and digests at the age when the human mind is most expansible, the un-ground consistency of the original messages has become almost indigestible to the modern reading public. It would be dangerous and detrimental to the future of civilization if we looked for a remedy on the side of the creative messages themselves. It is on our own side that the cure must be found. Whatever the total cure may be, insistence on direct contact with the classics during our college years is an indispensible part of it.

Direct contact with the classics implies their physical presence. In our eagerness, as teachers, to convey and to transmit, we are apt to neglect qualities that elude verbalization, and thereby to efface the fineness of distinction between the great and the mediocre, the impressive and the boring, the original and the imitation. Because the more subtle essence of the classics is not itself contained in what we can teach of them explicitly, we are apt to underestimate it. Thus we are accustomed to teach poetry in uninspired translations, music by means of worn-out recordings, the history of art from small illustrations in textbooks. There is something dubious and immoral in the ease with which we often accept as teaching aids utterly inadequate reproductions and renditions of great works of art and of literature.

Our explicit teaching is, at best, an opening of doors. This aspect of our teaching of the classics may justify the otherwise questionable devices we use when we reduce the great work to crude propositions, when we overlook in our discussions its overwhelming radicalism, when we talk around it by way of biographical and iconological details, etc. But these devices will be justified only if the door we try to open is not walled off; the door must actually lead into the realm of inexplicable subtlety which distinguishes the classics from mediocre works and provides them with their potency and with their enormous resistence to the lapse of time. Otherwise, *particularly when we are at our best as teachers,* we shall be suspected of acting like people who open a door but stand in the doorway barring the passage.

It is not necessary to be a purist. A good colored slide is, of course, superior to a good black and white one; a first-class facsimile in the original size is superior to both types of slides. A bilingual edition of poetry will give a more adequate impression of the poems, written in a foreign language of which, perhaps, we barely master the fundamentals, than either the translation alone, or the unsupported originals, read with the help of dictionaries and of dogged determination. Concerts broadcast over the radio always seem to convey the feeling of the concert hall far better than even the best recordings, etc.

But there are other ways in which we can make a habit of direct experience and appreciation of original work, particularly in the realms of art and music. A well-planned program of traveling exhibitions and of field trips to museums should form an integral part of the teaching process. More than that, a policy of systematic purchasing of original prints, both toward a permanent college collection and on the part of the students themselves, should help in fostering *the love of the original*. In our days it is possible to find prints, particularly by contemporary artists, which are not beyond the financial means of a small college or even of individual students and to which the quality of *greatness* can unquestionably be attributed.

III. SELECTION OF GREAT WORKS

In the great works of mankind, whether they be works of art or systems of thought, institu-

tions or chains of action, there is a continuity and mutual cohesion that makes it appear as if the totality of them were in some manner reflected and contained in each individual specimen of the collection. It is in this cohesion, in this orientation toward each other, that we experience human civilization as a whole. In certain works the phenomenon is more accessible than in others. Dante's *Comedy*, Goethe's *Faust*, Joyce's *Ulysses*, and in general those comprehensive works of literature in which creativity and erudition are fused, seem to harbor within their expanse the whole cosmos of the civilization that brought them forth. But we find this type of expansiveness also outside the field of literature. The *Acropolis of Athens*, the cathedrals of *Chartres* or *Florence*, Bach's *Art of the Fugue*, Grünewald's *Isenheim Altarpiece* or Giotto's mural decoration of the *Arena Chapel at Padua*, display, each of them, the same all-embracing wholeness the antecedents of which appear to comprise, in each case, the total course of human civilization up to and including the period of the particular work. Again, we find this cosmos-like inclusiveness in the great systems of philosophic and scientific thought, in Plato's *Republic* and in Newton's *Principia* or, to take examples outside the realm of Occidental thought, in the *Upanishads* and in the *Koran*.

In spite of their extraordinary nature and sparse distribution in the history of the human spirit, a complete list of such works would be far too formidable to be used in any one course or even in the total educational career of a single human life. But it is from a list of that type that the items for our general course in the humanities should be chosen. The number of items should be small enough to allow for thorough discussion. They can be spaced widely, for due to their expansive nature the thread of continuity between them can be established easily. Even when their selection is quite arbitrary, little damage will be done as long as the choice is limited to the all-embracing type of works as described.

We face peculiar difficulties in the selection of works *according to their greatness*. As individuals we mostly lack the depth of judgment and the comprehensiveness of background to make a proper choice ourselves. Moreover, all of us have been deeply impressed by certain books or works of art which general consensus would adjudge mediocre. Other works which are unquestionably superior, merely connote in our minds the memory of boredom, or even of rebellion against a traditional judgment which seemed to us at the time academic and dictatorial if not plainly outdated. We find that our impressionability with respect to the classics depends very much on the particular age level at which we receive the impressions. Is it possible in view of these obstacles, to set up a list of great works with any promise of objectivity, with any guarantee that it will function when used at the age level of college students?

It seems to the writer that in being aware of our educational mission we are often too eager in our search of *objectivity*. In exact arithmetic computations it is misleading to carry the exactitude of any one item beyond that of the least exact among the data. In the same manner, we should keep in mind that the possible degree of objectivity in education is naturally limited by two not very objective items which seem necessary to make education functional and possible to start with, viz., the personality of the educator and that spontaneity in the teaching process without which teaching is lifeless. We should insist on objectivity wherever the nature of our investigation requires it. But the judgment of the classics is a matter of *maturity* rather than objectivity. We must not mistake one for the other. Attempts to arrive at a sham objectivity by means of majority votes seem as ludicrous, in view of the nature of the thing to be judged, as the vain search for provable characteristics of greatness. As long as teachers and students, i.e., human beings, are involved in the teaching process, it is far better to face the responsibility of a personal point of view than to hide behind the structure of a pseudo-objectivity achieved mechanically.

In considering the limitations in understanding due to *the student's age level*, we must consider that man is not entirely defined by what he appears to be at any one particular moment. The psychologist who tries to measure and to evaluate a young person's characteristics, is apt to overlook those future traits of his subject which at the moment exist merely in the elusive modes of possibility and probability. But to the educator those are precisely the traits he is called upon to evoke into being.

Teaching consists to a large extent in activities which make little sense when seen merely in the light of the present manifestation of the student's personality. This would never have been forgotten if teachers had not naturally succumbed to the temptation of taking a superior attitude toward the student, as if they were at the point where the student ought to be. People want to grow; students are intensely aware of their incompleteness — they feel vividly the tension between the half-visible blueprint and the present state of affairs; but the man at the desk is not inevitably the ultimate goal they want to attain. If he thinks he is, even unconsciously, he has lost his game. But when he is himself in the process of growing and learning there is no difficulty in his appeal to possibilities inherent in his students of which they are only dimly aware at the time. This appeal is effected through the classics. The choice of classics offered should not, of course, produce a mood of hopeless inadequacy on the part of the student. But there is nothing wrong if their first appearance is experienced by him as a challenge rather than a comfort. Contact with the classics should open windows and doors to the student, make him discover vistas of whose existence he had no idea, and train faculties of his to which otherwise he would have paid no attention. We have to keep this in mind when we try to adjust our choice of classics to the age level of our students.

At the end of this paper two tentative lists of classics are given, one for a course on sophomore or freshman level, the other on junior or senior level.

IV. SEQUENCE IN THE TREATMENT OF GREAT WORKS

The *sequence* in which works of art and of literature are usually presented in a college course is based on history and chronology. We take it for granted that all teaching, just as expository writing, should proceed from the simple to the complex and from the early to the late. We identify these two processes inasmuch as we believe that the simple precedes the complex historically, both in the development of an individual person and in the growth of civilization in general. We assume, somehow, that such a growth process starts *ex nihil*. But this is the case only as seen in the most superficial manner and from the outside.

The student entering college, even if his previous education has been scant, is not a blank page. In treating him as if he were, we produce at best a "palimpsest" in which his college learning is written on top of the previous text, the one we ignored. Like the collector of old manuscripts the student, in his later years, might find that the original text carries more weight than the superimposed paragraphs. It does not seem quite reasonable, in introducing the student to the classics, to expect him to start at a beginning which to him is bewilderingly remote whereas in fact he already occupies a place, viz., now and here. *In the natural process of acquiring knowledge and understanding of the past we move backward from where we are into the past, not forward from the past toward ourselves!*

If the teaching of the classics is mainly concentrated in a single course or a group of interrelated courses apart from the rest of the student's work, there seems no other advantage to chronological treatment than that it is easier for the teacher, just as it is easier to tell a story from beginning to end than in an intricate arrangement of flashbacks. But it is through such flashbacks that we normally and naturally get acquainted

with historic growth. As far as the writer knows, little experimenting has been done in this field — in any case, little has been published — and he gives his suggestions for what they are worth.

When we say that in deepening our understanding of the past we move backward into it from where we are, we must keep in mind that we, or the students, *are* no more at the exact chronological present than at the "beginning of the past." When we scrutinize our tastes and preferences *prior to special training* with regard to the arts, we find that most of us like things which were new and revolutionary about one or two generations ago. It takes background and effort on the part of the public to appreciate what is revolutionary *now*, whereas it seems quite natural to enjoy works and ideas which shocked our parents. The point at which we are when we start getting interested in art and literature, is somewhere in the recent past; it is important to find and to know the exact era.

For these reasons, our initial choice in dealing with the classics should be among the great works of the nineteenth and very early twentieth century, whose indirect influence is still predominant in our present thinking and in our taste of today. Even if the student has never had any direct contact with those works, he will understand them in a manner, because he will recognize in them ideas which have become his own, and the concept of beauty and form implied in them will naturally appeal to him. From there we can spread out both into the past and toward the present. The *thread* of our sequence will be provided by the strain of influence and presupposition by virtue of which each great work refers backward to its antecedents and, less visibly, forward toward elaboration and reaction. In our Occidental civilization it will be mainly the two strains of aesthetic and political classicism, and of Judaeo-Christian ethics and metaphysics, that will eventually carry the student back to the Greek and Hebraic beginnings of that civilization.

V. TECHNIQUES OF COOPERATIVE TEACHING — SELECTION OF TEACHERS

Our limitation in breadth of knowledge is the price we have to pay for specialized training in our particular field. But at the same time, we are somehow aware of what the desirable sum total of an undergraduate college education is — a sum total most of us could not show in detail after ten years of teaching in a department. This awareness, and our own native curiosity, are for most of us a continual stimulus to trespass, as it were, in the realms of knowledge outside our field. Thus we create the conditions for an understanding with our colleagues, founded not merely on certain educational ideas we have in common, but on the subject matter of our respective knowledge itself. Our information, though it is limited, is interwoven with theirs, and the presence of such mutually interlaced information should make it possible to present the student with a *continuum* of knowledge rather than with the clean-cut compartments without connecting doors, which we are accustomed to display in our classes.

Such a continuum can be achieved in courses taught cooperatively by a number of teachers. This requires both good will and careful organization. More than that, it requires the readiness and the humility that go into a permanent learning process on the part of the teacher. If a course taught by several teachers cuts across their several fields it means that they intend to learn from each other; it means that they will abandon, not only their occasional half-conscious attitude of monopoly and proprietorship toward their field but, even more, the dignified reserve and aloofness with respect to "outside" fields, with which they sometimes protect their academic integrity. These attitudes have to be replaced by a new sense of responsibility; this invariably generates a certain atmosphere of tension and even of excitement — qualities which can be very conducive to good teaching.

Among the types of cooperative teaching that have been tried out at American colleges, there are three which might be especially suitable in our

case: the lecture series with attendance of a coordinator; the panel discussion involving a small number of instructors, followed by a short general discussion; and what we may name the multipolar seminar discussion. The terms "lecture" and "discussion" are used here in a very general and not necessarily literal sense.

The ideal form of presentation and discussion of the great works of art and literature is the *seminar discussion*. In a course aiming at synthesis and offered therefore at an earlier stage than is customary for seminar courses, the style of discussion will have to be adapted to the less mature and less sophisticated level of understanding. Also, the presentation of the material must be such that it will give original information rather than an advanced treatment of previously acquired knowledge. Less emphasis will be put on independent research projects of individual students, although that aspect of seminar work should not be neglected even at a very elementary level.

These modifications of the ordinary seminar can be achieved without great difficulty. On the other hand, the participation of several instructors, although it is by no means unusual in seminar discussions, requires great organizational skill when the purpose of employing more than one discussion leader is to combine points of view and to interrelate subject matters which are ordinarily taught in different departments. But the type of discussion which results when such cooperative teaching is successful and which we should call *multipolar*, produces such gratifying effects that it is well worth the consideration and the perseverence necessary to accomplish it. Even when an individual instructor can be found whose breadth of knowledge and background would appear to designate him for the whole job, this multipolar presentation of the great works of art and literature will be preferable on educational grounds, for it achieves the three-dimensional or "stereoscopic" vision essential to good learning.

It goes without saying that in this process teachers are students; also, the more successfully the seminar discussion can be developed, the more the students themselves will participate in the teaching process.

The *selection of instructors* for such a course taught cooperatively and covering a number of fields, should not proceed necessarily and solely along the lines of their respective training and accredited qualifications. There is no greater obstacle to the broadening of the college teacher's background than the impossibility, for him, to teach outside his own department. This is no propaganda for haphazard experiments in educational dabbling. Most of us have, at one time or another, experienced the refreshing and liberating effects of teaching in fields that have not occupied our attention for a long time — in fields where we are carried by our curiosity rather than by our graduate training. The enthusiasm in such teaching — which is learning — is readily communicated to the students, and unless we take unreasonable chances, the quality of the job done will justify the hazard.

Instructors intending to teach a course cooperatively should produce, in the relation of their views to each other, what may be called the *rainbow effect*. There is no reason to fear a diversity of views without which there would be no point in the multipolar type of presentation discussed earlier. But this diversity should be capable of mutual orientation; it should conglomerate into a unity of mutual understanding in which discussion achieves the result of more and better understanding, just as the colored stripes of a *rainbow*, far from merging into one, enhance each other in their mutual relationship because their origin is identical. This origin, the source of light and inspiration refracted in different manners by the different media of subject matter and the different fabrics of personality and background, is the unity and wholeness of the great works of art or literature which appeal to the potential wholeness within ourselves, students and teachers alike.

In the course of cooperative teaching, *adjustments* will be necessary almost continually. There

must be a great deal of leeway for individual methods of teaching, but each instructor will find it just as necessary to modify his own accustomed methods as the situation requires. The course cannot be taught identically from year to year; there will be changes in personnel as well as in the selection of subject matter. The *chairman* in charge of the whole course, or the steering committee, will have to be on guard all the time. It will be his or their job to achieve that delicate balance between organization and elasticity without which a course like this is in danger either to solidify into routine or to go astray into irresponsible experimenting at the student's expense.

Cooperative work in this sense provides not only good and effective teaching at the moment; it also produces better teachers. It is, in fact, a useful instance of *in-service-training* for the teachers who participate in it. As far as this writer can tell, cooperative teaching turns out to be, when organized along the principles indicated and apart from a preparatory phase of insecurity and internal resistance, an unusually gratifying and invigorating experience which invariably results in a general improvement in working methods.

VI. SPECIAL SUGGESTIONS

It is by way of an agenda for further consideration that the writer wants to throw in the following suggestions:

The discussion of a classic displayed in class must be sufficiently close to the work to allow for a complete *fusion of discussion and display.* This is easy in the interpretation of texts. In the plastic arts and in music the fusion must be achieved by special techniques in which the teacher should make use, to a certain extent, of his own creative faculties.

The great *danger of seminar discussions* dealing with works of art is the tendency toward abstract and conceptual treatment. Ideas are the natural subject of discussions, and we are tempted, while discussing the classics, to reduce them to systems of ideas. This danger is quite acute when the selection of classics is limited to great books which do not consist of expository writing.

A surprisingly efficient technique of implantation is the *imitative method*: the student gains insight into the structure of a work by imitating its details. Melodic lines of a contrapuntal work of music, the compositional scheme of a painting, stage sets for a play, the actor's gestures and the poet's intonation of his words, are elements that offer themselves to direct and repeated reproduction on the part of the student (and the teacher).

In introducing the classics to students unaccustomed to reading or looking or listening, it is advisable to articulate their attention by *prepared questions* assigned before the reading or listening, etc. But this is a temporary scaffolding which must be dismounted later, or the prearranged beams of attention will prevent the development of integral vision.

Emphasis on medium is another bridge toward first insight into the classics. The execution of a work in the nature of its medium and of the materials that went into it, is one of the easiest and most gratifying aspects of fitness, genuineness, originality, and greatness, for the beginning student to grasp. In later discussions, too much stress on this aspect might tend to divide into divergent fields what we try to unite, namely the essence by which the work addresses itself to man-as-a-whole, the significance by which it is part of the great continuity of human civilization.

In our discussion of medium and function we must not be tempted by our *desire for conceptual purity* to close our eyes to true greatness: the hybrid medium of the opera, or the lack of function in the design of Renaissance architecture, are no greater obstacles to the absolute quality inherent in them, than are the scientific "fallacies" in Dante's *Comedy* or the fictional "adornments" of the Platonic dialogues.

Superficiality is an objection invariably raised at the mention of courses like the one proposed in this paper. We hear that in the bird's eye view of a field of knowledge the detail is lost, and that it is in the detail, i.e., in each item of knowledge

itself, that the essence of knowledge is hidden; that a *Survey of the Arts* (including letters) cannot provide more than a hodge-podge of impressions which do not even reach the level of aesthetic experience because they are swallowed untasted and unjudged, etc. But as a matter of fact, just as confusion is the necessary prelude to clarity, superficiality will be a prelude to depth and thoroughness if we are aware of its preparatory and temporary function. If we want to avoid superficiality radically we must avoid learning, both in school and in life at large. Naturally, it is essential not to mistake superficiality for vision, or quantity for breadth of vision.

VII. TWO TENTATIVE LISTS OF CLASSICS ARRANGED ACCORDING TO THE PRINCIPALS STATED IN THIS PAPER

These lists are tentative in more than one sense. Selections of that kind tend to be subject to change even after years of experience. Changes in the teaching staff and the fluctuating availability of material inevitably modify a course like this from year to year. Except for a few items, the selections were made so as not to compete with material ordinarily offered in other courses, particularly in English literature.

A. On Freshman-Sophomore Level:

First Semester:

1. Tolstoy, *War and Peace*
2. Wagner, *Lohengrin*
3. Rodin, *Gate of Hell*
4. Beethoven, *3rd Symphony*
5. Shakespeare, *Othello*; *Troilus and Cressida*
6. Rembrandt, late portraits
7. Merejkowski, *The Romance of Leonardo da Vinci*
8. Michelangelo, murals of the *Sistine Chapel*

Second Semester:

9. From the Bible: *Genesis*; *Amos*; *St. Matthew*
10. Bach, *Passion According to St. Matthew*
11. Plato, *Symposium*
12. *The Acropolis of Athens*
13. Sophocles, *Antigone* or *King Oedipus*
14. O'Neill, *The Hairy Ape*; *Emperor Jones*
15. Stravinsky, *Le Sacre du Printemps*

B. On Junior-Senior Level:

First Semester:

1. Dostoyevsky, *The Possessed*
2. Beethoven, *9th Symphony*
3. Shakespeare, *Richard III*; *Tempest*
4. Grünewald, *The Isenheim (Colmar) Altarpiece*
5. Leonardo, Selections from his *Notebooks*
6. Plato, *The Republic*
7. From the Bible: *Job*; *Epistle to the Galatians*; *Revelation*
8. Bach, *B minor Mass*

Second Semester:

9. Giotto, the Padua murals
10. Dante, *Divine Comedy*
11. The Cathedral of Chartres
12. Mozart, *Don Giovanni*
13. Aeschylus, *Oresteia* (trilogy)
14. O'Neill, *Mourning Becomes Elektra* (trilogy)
15. Picasso, *La vie*; *Les demoiselles d'Avignon*; *Guernica*
16. Stravinsky, *Symphonie des Psaumes.*

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